TRANSPORTATION CLIMATE CHANGE TABLE

COMPANION REPORT: STAKEHOLDER REVIEW OF THE TRANSPORTATION CLIMATE CHANGE TABLE'S OPTIONS PAPER

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ALL REPORTS RELATING TO THE TRANSPORTATION TABLE'S STAKEHOLDER CONSULTATIONS WILL BE AVAILABLE AT:

English: www.tc.gc.ca/envaffairs/english/ttableconsultations
French: www.tc.gc.ca/envaffairs/francais/consulttablet/

101-06647/

LIST OF ACRONYMS

General

AFV	Alternative fuel vehicle
ATV	All-terrain vehicle
CAFC	Company Average Fuel Consumption
CCA	Capital cost allowance
CNG	Compressed natural gas
ENGO	Environmental non-governmental organization
GHG	Greenhouse gas
HDPI	High-pressure direct injection
HOV	High-occupancy vehicle
ITS	Intelligent transportation system
LCV	Longer combination vehicle
LRT	Light rail transit
LNG	Liquefied natural gas
MOU	Memorandum of understanding
NGV	Natural gas vehicle
NWT	Northwest Territories
OEM	Original equipment manufacturer
PNGV	Partnership for New Generation Vehicles
PTW	Power two-wheeler
SUV	Sport utility vehicle
TDM	Transportation demand management
VOC	Volatile organic compound

Organizations

APTA	Atlantic Provinces Trucking Association
APTC	Atlantic Provinces Transportation Commission
CAA	Canadian Automobile Association
CCMM-CNTU	Conseil Central du Montréal Métropolitain
CNGVA	Canadian Natural Gas Vehicle Alliance
CPATF	Canadian Partnership for Alternative Transportation Fuels
CPPI	Canadian Petroleum Products Institute
CRFA	Canadian Renewable Fuels Association
CVMA	Canadian Vehicle Manufacturers' Association
CRASH	Canadians for Responsible and Safe Highways
CTA	Canadian Trucking Alliance
FEESP-CNTU	Fédération des employées et employés des services publics
MTA	Manitoba Trucking Association
NRCan	Natural Resources Canada
STA	Saskatchewan Trucking Association
STO	Société de transport de l'Outaouais
TTC	Toronto Transit Commission
WCEL	West Coast Environmental Law Association

EXECUTIVE SUMMARY

Introduction

Following completion of its Options Paper, the Transportation Table held a series of stakeholder consultations in February 2000. These consultations had the following objectives:

- To seek a broad range of regional and sector stakeholder comments on the Options Paper, to test the measures identified for reducing greenhouse gas emissions in the transportation sector, and to discuss their implications

- To capture these regional and sector views and comments in a separate *Companion Report* (this document).

In total, nearly 400 stakeholders attended the sessions. Participants were drawn from industry (38%), all levels of government (31%), and interest groups (31%). The Table heard over 80 formal presentations from these participants, as well as extensive discussion and dialogue.

This *Companion Report* provides a synthesis of the results of the consultation process. The views and information included here reflect the input of participants. The Transportation Table has not verified the accuracy or relevance of any factual information provided.

The Options Paper will not be revised as a result of the consultations. Instead, this *Companion Report* will be submitted to the Ministers of Transportation and the Climate Change Secretariat, for consideration in parallel with the Options Paper.

Key Themes and Messages

The consultation sessions clearly demonstrated that stakeholders support the goal of greenhouse gas (GHG) reduction in the transportation sector. Most stakeholders are willing to act, and want to be engaged. In short, there is substantial support for efforts to build on the Table's work, and a strong desire to begin moving forward.

Almost all stakeholders consider the Options Paper to be a good start, and there is broad support for many individual measures in the report. The input received clearly indicates that some of the Table's measures could be adopted for early action, and would enjoy substantial support if implemented in cooperation with stakeholders.

Notwithstanding these general comments, some stakeholders believe the Options Paper does not go far enough to adequately address GHG emissions. Conversely, certain other stakeholders argue that the cost estimates are overly optimistic, and that further study is needed before moving towards implementation.

Data gaps are also of concern to many participants. There was general agreement with the Table's view that better data and more analysis are required over the coming months, to address this important limitation.

Throughout the consultations, there were repeated calls for leadership as a critical need. Stakeholders believe leadership is required not only from the various levels of government, but also from the private sector. A pro-active response from all sectors is necessary to address climate change issues in the transportation sector.

The call for leadership was accompanied by a call for greater cooperation -- between the various levels of government, between governments and other stakeholders, among stakeholder groups, and among transportation service providers.

There was also general recognition that greenhouse gas reduction should be positioned in the larger context of sustainable transportation, and that many of the measures proposed by the Table are needed to achieve sustainable transportation, not just GHG reduction. An integrated approach and a diversity of measures are needed (no single initiative will provide the solution).

Stakeholders remain strongly interested in dialogue and consultation. This, coupled with sound analysis and informed decision-making, is necessary to maximize the benefits and minimize the costs of Canada's GHG reduction program in the transportation sector.

Summary of Input on Measures

The following brief summary outlines key stakeholder input regarding the specific proposed GHG reduction measures in the transportation sector:

- ***Education and awareness:*** Stakeholders in all locations identified the critical need for early and sustained public education and awareness activities relating to transportation and climate change. Awareness encourages behavioural change (although this alone won't change behaviour), and may contribute to support for government policy measures.

- ***Land use:*** There was broad concern among participants concerning the exclusion of land use planning from the Table's mandate. In all sessions, recommendations were made concerning integration of land use and transportation. There is a widely perceived need to fully integrate land use issues into the proposed packages of transportation measures (particularly the passenger package).

- ***Passenger package:*** For passenger transportation, the input from stakeholders supports efforts to reduce travel demand, shift travel away from GHG intensive modes to less intensive alternatives, and reduce emissions within modes. There is a strong sense of urgency to move forward with high priority measures. Support was strongest for substantial, integrated measures dealing with urban transit; travel demand management efforts; strengthening of interurban rail; and specific initiatives such as tax-exempt transit passes and bicycle/pedestrian infrastructure.

- ***Road infrastructure package:*** For road infrastructure, there is substantial support for enforced and reduced speed limits, which together represent about two-thirds of the GHG reduction potential among the analysed measures in the package. The input also supports most of the other most promising, promising, and less promising measures proposed by the Table, with mixed support for HOV lanes and reservations from some stakeholders regarding some intelligent transportation system (ITS) applications.

- ***Freight package:*** For the freight package, a concern raised by many participants is the apparent absence of measures for modal shift. There is broad support for measures to encourage increased intermodal co-operation and shipping. Some stakeholders also recommend more aggressive action to cause significant modal shift. Otherwise, participants generally supported the Table's most promising and promising measures, with the exception of the long truck measures, which attracted some strong opposition, but were also supported by other stakeholders.

- ***Vehicles and fuels package:*** For the vehicles and fuels package, input was received on both efficiency and fuel-related measures. Regarding efficiency, the automotive industry does not necessarily endorse fuel efficiency targets, and opposes feebates, considering these to be ineffective, high-cost measures. All other input received on these measures was supportive, with some stakeholders arguing that the harmonized target of 25% improved efficiency does not go far enough. Regarding fuel-related measures, information provided by stakeholders emphasizes the potentially significant contribution of each alternative fuel technology to GHG reduction. Some stakeholders stated that the Options Paper underestimates the potential, while the petroleum industry believes the potential is overstated. Most input also stresses the importance of incentives as a means to encourage the development of certain alternative fuels. Input was also received concerning the benefits of improvements in conventional fuels.

- ***Off-road package:*** The Table received very little input on the off-road sector. Stakeholders recognized that opportunities exist regarding both the vehicles/equipment and their operation, but provided only limited specific guidance.

- ***Fuel taxes:*** Stakeholder opinion on the topic of increased fuel taxes was mixed. However, a high level of support was expressed, across the country, for dedicating at least a portion of fuel tax revenues to transportation infrastructure and systems (particularly for low GHG modes, and for other improvements that reduce GHG emissions).

- ***Other comments:*** Many stakeholders pointed out that the measures required to achieve significant GHG reduction will require very significant and sustained investment in transportation infrastructure and improved services. But stakeholders also noted that this effort serves many goals in addition to GHG reduction, including reduced air pollution, reduced health impacts, less congestion, and a more sustainable transportation system.

Input on specific measures is provided in the main report. For ease of reference, Exhibit ES-1 provides an index to the comments, keyed to the list of measures in the Options Paper.

Regional Perspectives

In all eight consultation sessions, participants stressed the importance of recognizing ***unique local and regional situations and considerations*** in the design and implementation of GHG reduction initiatives in the transportation sector. This refers to differences both between regions and provinces, and also within regions and provinces. In many locations, specific mention was made of the importance of considering the ***needs of rural (including agricultural) and northern transportation users***.

Notwithstanding the unique situations and circumstances that exist across the country, participants also noted that ***opportunities exist in all areas***, and that there are many ***benefits gained through transfer of experience between jurisdictions***. For instance, it was noted that measures suitable for larger cities can also be relevant in other areas (smaller cities and rural communities), and many participants noted the importance of demonstrations of a measure in one area as a basis for wider application.

Exhibit ES-1 - Index to Table Measures

PASSENGER PACKAGE			ROAD INFRASTRUCTURE PACKAGE		
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F 8C	Accelerated truck scrappage (5 years)	3-21	H 1BL	Target harmonized: 25% by 2010 over current target	3-24
E 7	Rail freight car CCA	3-22	H 7B	Alt. fuel infrastructure, propane	3-28
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F 6	Truck lubricants	3-19	**LESS PROMISING MEASURES**		
F 2B	Truck speed control to 90 km/hr	3-19	H 10D	Feebate, harmonized with phase-in	3-25
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LESS PROMISING MEASURES			*Other less promising measures not addressed*		
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F 11	Truck driver training in idling	(3-19)	H 1BH	Target harmonized: 25% by 2010 over actual fleet ave.	See H1BL
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1. INTRODUCTION

1.1 GENERAL BACKGROUND

Under the National Climate Change Process, sixteen multi-stakeholder "Issues Tables" were created to identify and assess greenhouse gas reduction options within Canada. This process is a follow-up to the December 1997 Kyoto Protocol which, if ratified, will commit Canada to reducing greenhouse gases to six per cent below 1990 levels for the period 2008-2012.

The Transportation Table was sponsored by federal, provincial and territorial transportation Ministers. Transportation is an important sector as it is the single largest source of greenhouse gas emissions, accounting for 25% of Canada's total in 1997. If current trends continue, greenhouse gas emissions from the transportation sector are forecast to be 32% above 1990 levels by 2010, and 53% above by 2020.

The Transportation Table identified and analyzed various measures to achieve progressively greater reductions of greenhouse gas emissions within this sector. The results of this work are presented in the Table's Options Paper, which has been submitted to the Ministers of Transportation and to the National Climate Change Secretariat. The paper will be considered, with input from the other Tables, as Canada develops its national strategy on climate change.

Extensive stakeholder involvement contributed to the development of the Options Paper. The Transportation Table itself is made up of a group of 25 representatives from a diverse range of organizations. The Table established a number of sub-groups involving 120 stakeholders, and consulted with many more organizations and individuals in the conduct of its analysis. Information sessions were also held in several cities across Canada, involving some 350 stakeholders, provincial ministers, and the Table members.

1.2 STAKEHOLDER CONSULTATIONS

Following completion of the Options Paper, the Transportation Table held a series of stakeholder consultations with the following objectives:

- To seek a broad range of regional and sector stakeholder comments on the Options Paper, to test the measures identified for reducing greenhouse gas emissions in the transportation sector, and to discuss their implications; and,
- To capture these regional and sector views and comments in a separate *Companion Report* (this document).

As originally planned, the Options Paper will not be revised as a result of the consultations. Instead, this *Companion Report* will be submitted to the Ministers of Transportation and the Climate Change Secretariat, for consideration in parallel with the Options Paper.

A real effort was made to involve a full range of stakeholders with an interest in transportation. Over 1100 groups and individuals were invited to participate in the sessions, based on their

known expertise, their interest in the subject matter, and/or the potential impact of the options on their sector or region. (Note that the consultations were not intended to involve the public-at-large. Broader public consultations are the responsibility of the Climate Change Secretariat.)

Meetings were held in 8 cities across Canada in February 2000:

Vancouver, February 7, 2000	Toronto, February 17, 2000
Calgary, February 9, 2000	Montreal, February 21, 2000
Regina, February 10, 2000	Halifax, February 23, 2000
Winnipeg, February 15, 2000	St. John's NF, February 24, 2000

The Table has produced a Session Summary for each meeting. These documents are included as Appendix A of this report. In addition, participants and other stakeholders were invited to provide written comments on the Options Paper. All such submissions received on or before March 27, 2000 are summarized in Appendix B.

A basic agenda was followed in each of the eight consultation meetings, adjusted to meet the specific needs in each location (depending on number of participants and presentations). Key elements of the agenda were:

Welcome and introductions	
Introductory presentation	Delivered by the Table Co-Chairs, followed by questions
Presentations by stakeholders	Formal presentations, up to five minutes per organization, followed by questions and discussion. The number of presentations varied from 2 to 19, depending on location.
Lunch break (most locations)	
Breakout group discussions	Discussion in small groups, organized based on the Table's packages of measures (passenger, freight, etc.). Each group considered the following theme questions[1]:
	Which of the measures in the Options Paper are most promising in your region?
	What additional measures should be considered?
	Which measures should be bundled together for effective implementation?
Breakout group reports	Reporting back session, with reports delivered by reporters selected by each group
Closing remarks	Co-Chair's overview of key themes and messages heard during the session.

1 The first Consultation Meeting in Vancouver considered an earlier set of questions, which were revised to become the questions listed here, based on experience and suggestions from participants.

Table 1.1 presents the number of stakeholder participants, broken down by city. In total, nearly 400 stakeholders, from a wide range of organizations, attended the sessions. The Table heard over 80 formal presentations from these participants, as well as extensive discussion and dialogue.

Between five and ten members of the Transportation Table also participated in each session. Both Co-Chairs, Ron Sully (Assistant Deputy Minister of Transport Canada) and Ken Ogilvie (Executive Director of Pollution Probe), participated in all locations, and a core group of four Table members (Michael McNeil, Johanne Gélinas, Tony Taylor, and Mark Nantais) each participated in at least half of the sessions. Senior members of the Table Secretariat attended as resource persons, and George Greene of RFI Eco-Strategies (François Bregha in Montreal) facilitated the sessions.

Table 1.1
Stakeholder Participation in Consultations

Stakeholder Group		Vancouver	Calgary	Regina	Winnipeg	Toronto	Montreal	Halifax	St John's	Total	Percentage
Industry	Rail	2	2	1	2	2	1	0	0	10	
	Bus	0	1	0	1	2	2	0	0	6	
	Transit Providers	3	1	1	1	7	10	2	0	25	
	Air	1	3	1	0	0	2	0	1	8	
	Truck	0	3	1	2	2	1	1	0	10	
	Marine	3	0	0	0	0	3	0	0	6	
	Auto	2	2	1	1	9	4	2	2	23	
	Fuels	4	5	0	0	7	5	2	0	23	
	Equipment & Infrastructure & Utilities	3	1	2	2	4	4	1	1	18	
	Misc. users (Agric., Forestry, Construction, Mining)	7	4	2	2	1	1	1	1	19	
	Sub-total	*25*	*22*	*9*	*11*	*34*	*33*	*9*	*5*	*148*	38.1%
Gov't	Municipal & Regional	5	7	8	3	4	9	3	4	43	
	Provincial	5	7	9	10	4	10	8	5	58	
	Federal	1	2	0	5	4	3	1	2	18	
	Sub-total	*11*	*16*	*17*	*18*	*12*	*22*	*12*	*11*	*119*	30.7%
Interest Groups	Environmental	3	4	1	1	2	8	7	2	28	
	Community & User Groups	5	3	4	1	10	4	1	2	30	
	Academic	3	4	1	3	5	3	3	0	22	
	Business/Commerce/Associations	5	2	1	1	5	8	3	3	28	
	Labour	0	1	3	1	1	1	0	1	8	
	Aboriginal	0	1	1	0	0	0	0	0	2	
	Other	1	1	0	0	1	0	0	0	3	
	Sub-total	*17*	*16*	*11*	*7*	*24*	*24*	*14*	*8*	*121*	31.2%
	TOTAL:	**53**	**54**	**37**	**36**	**70**	**79**	**35**	**24**	**388**	100.0%
	Total # Invited:	**150**	**213**	**103**	**93**	**162**	**206**	**104**	**129**	**1160**	

1.3 ABOUT THIS REPORT

This *Companion Report* provides a synthesis of results from the eight consultation meetings and from the written submissions. The balance of this report is organized as follows:

- Section 2 provides a brief overview of the key themes and messages emerging from the consultations.
- Section 3 provides detailed summaries of the input on specific measures, and the input on a number of other issues.
- Section 4 summarizes additional regional perspectives not reflected in the discussion of specific measures.
- Section 5 provides a brief concluding note concerning the consultation process.
- As previously noted, Appendices A and B (separately bound) provide copies of the full summaries and reports on which this *Companion Report* is based.

Note that some of the input received includes references to studies and other factual information. This information is presented here as provided. The Table has not verified the accuracy or relevance of the information.

2. SUMMARY OF KEY THEMES AND MESSAGES

This section highlights key themes and messages that emerged from the Transportation Table consultations. The points summarized below are general in nature, and should be read in conjunction with the more specific input provided in subsequent sections of this report. While most points listed enjoy considerable agreement among stakeholders (except as noted), this does not necessarily imply that all participants agree on each point.

2.1 MAIN CONCLUSIONS

The consultation sessions clearly demonstrated that stakeholders support the goal of greenhouse gas (GHG) reduction in the transportation sector. Most stakeholders are willing to act, and want to be engaged. In short, there is substantial support for efforts to build on the Table's work, and a strong desire to begin moving forward.

Almost all stakeholders consider the Options Paper to be a good start, and there is broad support for many individual measures in the report. The input received clearly indicates that some of the Table's measures could be adopted for early action, and would enjoy substantial support if implemented in cooperation with stakeholders.

Data gaps are of concern to many participants. There was general agreement with the Table's view that better data and more analysis are required over the coming months, to address this important limitation.

Throughout the consultations, there were repeated calls for leadership as a critical need. Stakeholders believe leadership is required not only from the various levels of government, but also from the private sector. A pro-active response from all sectors is necessary to address climate change issues in the transportation sector.

The call for leadership was accompanied by a call for greater cooperation -- between the various levels of government, between governments and other stakeholders, among stakeholder groups, and among transportation service providers.

There was also general recognition that greenhouse gas reduction should be positioned in the larger context of sustainable transportation, and that many of the measures proposed by the Table are needed to achieve sustainable transportation, not just GHG reduction. An integrated approach and a diversity of measures are needed (no single initiative will provide the solution).

Stakeholders remain strongly interested in dialogue and consultation. This, coupled with sound analysis and informed decision-making, is necessary to maximize the benefits and minimize the costs of Canada's GHG reduction program in the transportation sector.

2.2 ADDITIONAL THEMES AND MESSAGES

The Options Paper

As noted above, most stakeholders consider the Options Paper to be a good start. Some stakeholders also believe the report does not go far enough ("timid"). Stakeholders expressing this view support more aggressive measures, and place more emphasis on restructuring of the transportation system (shifting to more sustainable modes). Conversely, certain other stakeholders argue that the cost estimates are overly optimistic, and that further study is needed before moving towards implementation.

Several interventions suggest that the estimates of cost and impact are too optimistic (program experience to date has had limited success). Conversely others argue that synergistic effects will increase the impact, and that certain measures offer much greater potential for GHG reduction than is reflected in the Options Report (due to missing or poor data). All participants generally agree with the need for better data.

Short-term/long term

Most stakeholders support a long-term perspective. Measures that meet the Kyoto target for 2008-2012 are important, but measures with significant impact only in the longer-term should not be discounted for this reason. Because technology and structural change takes a long time, we need to start now.

Many stakeholders also believe that the rate of adoption and penetration of innovative or new technologies assumed in the Options Paper is too conservative (more can be achieved with the right push). Many ideas and approaches have been proposed to achieve accelerated adoption.

Integration/linkage

Multifaceted solutions are required, involving a mix of diverse elements such as education and behaviour change, technology, and land use planning. Integration of specific measures into strategies and bundles of measures is important. Moreover, integration/linkage with the work of other Tables is essential (especially the Municipalities Table regarding land use, as well as the Industry and Electricity Tables).

Benefits and costs

Depending on the measure, important co-benefits can include more sustainable and liveable cities, improved health and safety, protection of the environment, and more. In addition, business opportunities are significant in every region. The climate change-related benefits of taking action, the co-benefits, and the costs of inaction, have not been fully quantified in the national process.

Competitiveness impacts are an important consideration in several areas, including both the competitiveness of particular industries, and Canada's international competitiveness.

Harmonization of some measures with the U.S. is desirable, to maximize benefits and minimize costs.

Regional perspectives

In each region, there are opportunities and measures that are implementable today. There are also unique needs, barriers, and perspectives that need to be considered. Important regional characteristics include urban/rural mix, scale (e.g., urban size, distances), existing infrastructure, nature of the economy, natural resource base, costs, and anticipated co-benefits. Regional differences in these areas underline the need for flexible implementation, and equitable distribution of benefits and costs.

Approach

Most stakeholders recognize the contribution that voluntary initiatives can make, but many also point to experience with such initiatives as evidence that voluntary approaches alone will not be enough. Similarly, there are conflicting views concerning the value of mandatory requirements. Many stakeholders believe selected regulatory requirements are essential to accelerate market and behaviour changes. Conversely, some other groups argue that mandatory measures should be the last option, and that they can delay change in the marketplace. There is also debate about the relative role of incentives and disincentives. While most stakeholders agree that incentives can play an important role, there is more caution concerning the application of disincentives.

Education/awareness/communication

Public awareness is a key requirement, and the public has an important role to play in the reduction of GHG emissions. While there is broad support for this conclusion, there are also differing perspectives: some stakeholders view education/awareness as an alternative to more aggressive measures; others view it as a complement to such measures.

Investment

There is broad support for investment in transportation infrastructure and service improvements for sustainable transportation alternatives, including transit and innovative/new approaches. However, differing views were expressed regarding investment in road infrastructure (some stakeholders emphasize direct impact of improved traffic flow on emissions; others emphasize diversion of traffic from other modes as a result). Many stakeholders support investment in fuelling and other infrastructure required for accelerated introduction of new technologies and alternative fuels.

Transportation systems

Investments in transportation systems and infrastructure are long term in nature. Consequently, several stakeholders argue that we need to develop an integrated long-term vision of transportation in Canada, which takes account of greenhouse gas reduction and sustainability.

This vision would provide a framework and guidance for ongoing transportation planning and decision-making.

Many stakeholders believe there is greater potential for modal shifts, and intermodal co-operation, than is reflected in the Options Paper. These opportunities are available for both passenger and freight transportation. Another important focus is transportation demand reduction (through such measures as land use planning, alternative services, and local production/ processing of goods).

Conflicting policies by governments sometimes work against GHG reduction. For example, some stakeholders point out that the Canada Transportation Act has led to rail line abandonment, resulting in increased travel and more reliance on GHG-intensive modes.

Pricing/financial instruments

There are divided views on acceptability of new fuel taxes, but broad support for allocation of existing fuel taxes (and new fuel taxes if adopted) to transportation infrastructure, particularly in support of GHG reduction. There is also substantial interest in other price/cost measures (tax exempt transit passes, distance based insurance, capital cost allowances, etc.).

3. SUMMARY OF INPUT

In this section, a more detailed summary of input received from stakeholders is provided. The text is divided into five sub-sections:

- Section 3.1: input on two new cross-cutting measures (public education and land use)
- Section 3.2: input on each of the five Options Packages
- Section 3.3: input on economic instruments (particularly taxes and pricing)
- Section 3.4: input on other issues
- Section 3.5: synthesis of input presented in Sections 3.1 to 3.4.

This structure coincides with the organization of information in the Options Paper. In particular, Sections 3.2 and 3.3 of this document correspond with, respectively, Sections 5.2 and 5.3 of the Options Paper.

In each of the following sections, the input of stakeholders is summarized on a collective basis where appropriate. In addition, the input of particular organizations is also summarized individually, where this adds clarity to the discussion. In such cases, additional detail on the views of the organization may be found in the appropriate *Session Summary*, or in the *Summary of Written Submissions* (Appendices A and B). For ease of reference, where applicable the specific session is noted in brackets following the summary of input.

3.1 CROSS-CUTTING MEASURES

Introduction

This section provides a record of input on two topics that attracted significant comment from stakeholders, and that relate to more than one of the Options Packages:

- Public education and awareness;
- Land use and transportation.

Overview of Stakeholder Input

Stakeholders in all locations identified the critical need for ***early and sustained public education and awareness*** activities concerning transportation and climate change. The need for such activities is broad, encompassing such groups as schools/children, drivers, consumers, and decision-makers. In some areas, including the North, there is a great appetite for information. Stakeholders strongly supported social marketing approaches, tailored to regional needs.

There was also broad concern among participants concerning the exclusion of ***land use planning*** from the Table's mandate. There is substantial opportunity for GHG reduction through planning choices, particularly in the long term. In all sessions, recommendations were made concerning the integration of land use issues into the proposed packages of transportation measures.

Detailed Input on Measures

MEASURE:	**Public Education and Awareness**
SUMMARY:	**Strong support for public education and awareness activities, and a call for early and sustained measures in this area.**

COMMENTS:

- Stakeholders in all locations identified the critical need for public education and awareness activities. Education and awareness encourage behavioural change (although this alone won't change behaviour), and may contribute to support for government policy measures. Stakeholders strongly supported social marketing approaches, tailored to regional needs.
- The Gaia Group believes that we must begin by clearly stating that global warming is a problem, and that we need to take serious action. (Regina session)
- The Canadian Vehicle Manufacturers' Association supports a hierarchy of approaches to GHG reduction, beginning with voluntary initiatives supported by increased public awareness. (Most sessions, and written submissions)
- The Canadian Petroleum Products Institute supports public education and efforts to raise awareness. Technology alone is not enough; public awareness is key. (Several sessions, and written submissions)
- The Canadian Renewable Fuels Association believes that raising awareness of GHG reduction options is important, and supports labelling environmentally friendly products. (Written submissions)
- The Urban Transportation Council of the Transportation Association of Canada states that continuing and comprehensive public information programs are required, structured on a collaborative basis by public and private organizations (not "top down" by senior governments). (Written submissions)
- Natural gas industry representatives noted the specific need to raise awareness concerning the widespread availability of natural gas as a transportation fuel, and the variety of vehicles on the market. (several sessions)
- A representative of the Dene Nation in the Northwest Territories (NWT) noted that many people in the north are not on the Internet; other means of making information available are also required. (Calgary)
- New Brunswick Lung Association believes that human health is a motivating factor for behaviour change. It is important to draw the links between climate change, transportation, human health, and pollution, using community-based social marketing techniques. (Halifax session)
- Resource Conservation Manitoba calls for a sustained outreach effort. Environmental non-governmental organizations (ENGOs) have a crucial role to play in public outreach but will require multi-year government commitments to fund their involvement. (Winnipeg session)
- Mouvement Au Courant suggests requiring automobile advertising to include GHG warnings similar to the warnings in cigarette advertising. An advertising campaign is also required, possibly financed by a tax on car advertising. (Montreal session; a similar proposal was raised from the floor in Halifax)
- Many other organizations spoke in support of education/awareness activities, including SNC-Lavalin, Atlantic Provinces Transportation Commission, Enbridge Consumers Gas, and City of Calgary.
- Breakouts: Groups in all locations support significant, long-term efforts in the area of education and awareness. Additional comments from the various groups:
  - We need a clear message that climate change is a problem, and we need to communicate this to consumers and the public in simple and understandable terms.
  - This effort should involve a broad range of participants, including federal, provincial, and municipal governments, community organizations and leaders, and other partners.
  - Education will not be effective unless bundled with improved vehicles, better transit, and other measures. We should be cautious about relying only on behaviour change (e.g., driving habits).

- Many groups supported sustained social marketing (like Participaction and the Health Canada smoking campaign), with a focus on GHG in general and on specific topics such as transit, driving habits, and vehicle purchase choices (e.g., efficiency, alternative fuels).
- Many groups also emphasized the importance of programs in the schools. It is important to start education and outreach activities early with children.
- Most of the measures discussed in the Options Paper need to be implemented with a public education component. Existing programs also provide a mechanism for delivery of information (for instance, vehicle inspection/maintenance programs).
- Market research is needed to understand the public's transportation choices. We need to think about how to make this issue resonate with the public (for instance through linkages to health).
- It is important to challenge small communities and interest groups to reduce greenhouse gases through innovation and problem solving. Small communities will respond with many good ideas.
- Public education also requires targets and performance measures that allow people to see that they are doing the right thing.

MEASURE: Land use and transportation

SUMMARY: Broad concern among participants concerning the exclusion of land use planning from the Table's mandate. Emphasis on the need to fully integrate land use issues into the proposed packages of transportation measures.

COMMENTS:

- Recommendations concerning the integration of land use and transportation planning emerged from all sessions. The general thrust of the input is that there is substantial opportunity for GHG reduction through planning choices, particularly in the long term.
- Urban Transportation Council of the Transportation Association of Canada: The Council's *New Vision for Urban Transportation* calls for more compact, mixed-use urban form. An integrated approach is essential, particularly regarding transportation and land use. (written submissions)
- TransLink: The Options Paper misses the interdependence of planning/urban form and transportation. Significant reductions in GHG for urban passenger travel can only be achieved as a by-product of a broader and integrated growth management strategy. (Vancouver session)
- City of Vancouver: What is missing from the Options Paper is a clear sense of where we want our cities to be heading. What people want is a more liveable city. Measures that promote transit will produce limited benefit if not linked to building better cities. (Vancouver session)
- International Centre for Sustainable Cities: Land use planning should encourage "smart neighbourhood development" where people live and work in the same area. (Vancouver session)
- Ecology Action Centre: The biggest problem affecting urban transit is inefficient land use. Perhaps we need federal standards with respect to zoning? (Halifax session)
- Other organizations that stress land use include the Sustainable Calgary Society, Atlantic Provinces Transportation Commission, Strathcona County Engineering and Environmental Planning, Resource Conservation Manitoba, the Gaia Group, and Better Environmentally Sound Transportation.
- Comments from the floor: There are common trends in rural and urban land use issues. In Saskatchewan, for instance, closure of grain elevators, closure of elementary schools, and big box commercial development, are all trends that create travel demand. (Regina)
- Breakout groups: Breakout groups in all locations support measures addressing land use and related issues (integration of transportation and land use planning). *Regina* group suggests infill development, including an incentive to discourage conversion of empty lots to parking. *St. John's*

group advocates planning in a manner that supports transit, and limits parking. *Winnipeg* group suggests municipalities provide a property tax credit or a payment for employers who build in areas serviced by transit. Also, jurisdictional issues make it a challenge to coordinate intercity and rural transportation planning with regional land use planning. *Calgary* group states that transportation/land use linkages are key considerations in both urban freight and passenger travel. Where is the demand for goods located, relative to new freight facilities and intermodal facilities in urban areas?

3.2 OPTIONS PACKAGES

This section presents stakeholder input on the five packages of measures developed by the Transportation Table (Passenger, Road Infrastructure, Freight, Road Vehicles and Fuels, and Off-Road). For each package, the summary begins with an *Overview of Stakeholder Input*. This is followed by *Detailed Input on Measures*, presented in a series of summary boxes:

- *Bundles:* Many stakeholders recommended bundling of measures (i.e. implementing certain measures together on an integrated basis). Moreover, the input received typically grouped related measures together. Therefore, for reporting purposes only, some groups of measures have been treated as "bundles" in the presentation of stakeholder input.

- *Other measures:* For other measures, the input is summarized below on a stand-alone basis. These measures may be related to one or more of the bundles, but are treated separately due to the nature of the input received.

- *New measures:* For some packages, new measures have been suggested by stakeholders, and elaborated to some degree. These new measures are also presented in separate summary boxes.

The discussion of each package concludes with *Other Comments* provided by stakeholders. This portion of the summary may include brief comments on specific measures, in cases where the measure did not attract sufficient input to warrant a more detailed discussion.

PASSENGER PACKAGE

Introduction

The discussion below presents stakeholder input on the Table's passenger package, and specifically on the following measures:

- Strengthening Urban Transit (bundle)
- Transportation Demand Management (bundle)
- Inter-urban Passenger Travel (bundle)
- Aviation Measures (bundle)
- Tax-exempt Transit Passes
- Bicycle and Pedestrian Infrastructure
- Distance-based Vehicle Insurance (new measure)

- Integrated Provincial/Regional Transportation Authority (new measure)
- School car trip reduction program (new measure)
- Power Two Wheelers (motorcycles) (new measure)
- Additional New Measures.

Overview of Stakeholder Input

The input from stakeholders supports efforts to ***reduce travel demand, shift travel away from GHG intensive modes to less intensive alternatives, and reduce emissions within modes.*** There is a strong sense of urgency to move forward with high priority measures. While different stakeholders have differing views of the appropriate mix of measures, most support some use of incentives (such as tax-exempt transit passes or subsidies for certain modes), and many also support disincentives and/or mandatory requirements (such as increased parking prices).

Many stakeholders pointed out that the measures required to achieve significant greenhouse gas reduction in the passenger sector will require very ***significant and sustained investment*** in infrastructure and improved services. But stakeholders also noted that this effort serves many goals in addition to GHG reduction, including reduced air pollution, reduced health impacts, less congestion, and a more sustainable transportation system.

Input from stakeholders also stressed the ***importance of linkages*** among the measures in the passenger package. In part this is reflected in the bundling of measures below, but there are also further linkages (for instance, between transit and transportation demand management). Stakeholders also stressed the importance of synergies and linkages between passenger transportation and other measures. This includes cross-cutting measures (land use and education); measures in other packages (such as intelligent transportation systems and other road infrastructure); and pricing and taxation measures.

Detailed Input on Measures

BUNDLE:	**Strengthening Urban Transit**. This bundle includes transit pricing (measure A4H in the Options Paper), transit service improvements (A3H), transit infrastructure (A2H), transit fare smart card (B14), and transit automatic vehicle location (B12).
SUMMARY:	**Strong support for substantial, integrated measures to improve transit.**

COMMENTS:

- Several transit operators and related organizations provided input (BC Transit, City of Calgary, City of Edmonton, OC (Ottawa-Carleton) Transpo, Amalgamated Transit Union, Toronto Transit, Société de transport de l'Outaouais (STO) and Agence métropolitaine de transport). These organizations support the basic thrust of the transit measures and the important role of transit in GHG reduction. For transit to play this role, it must be a viable alternative, which often means reversing a trend of declining funding, service, and ridership. Specific comments: (presentations at several locations)
  - Significant investment in transit infrastructure is required. The Halifax Regional Municipality states that the transit measures proposed are not feasible without attention to funding, which is the critical transit priority. BC Transit, the City of Calgary, City of Edmonton, OC Transpo, STO and the Amalgamated Transit Union support allocation of a share of fuel taxes collected by the

provincial and federal governments to transit.

  - Toronto Transit market research demonstrates that service improvements are more important to customers than transit pricing and technologies (City of Montreal also supports this conclusion). Therefore, the "transit service improvements" measure should be moved to "most promising", and the transit fare smart-card measure should be moved from "most promising" to a lower category.
  - Service related needs include improved frequency, convenience, flexibility, and accessibility (including adequate conditions for pedestrians at the start and end of each trip). Operational opportunities include establishment of a mandatory vehicle inspection program, and purchase of more energy-efficient vehicles.

- Urban Transportation Council of the Transportation Association of Canada: New funding sources are essential to increase the supply of alternative modes (transit, cycling, walking). Increased user fees for the use of roads by private vehicles could provide significant revenues. (written submissions)
- City of Montreal: Improvement of transit services is a fundamental measure that requires financing from other sources. The City's finances cannot support substantial improvements. (Montreal session)
- CCMM-CNTU and FEESP-CNTU: Systematic financial reinvestment is advocated for public transit. Property-tax financing of the Agence métropolitaine de transport capital fund must be maintained, and the same principle must be introduced for a general expenditure fund. (Montreal session)
- Ecology Action Centre: Transit improvements should be designated as "most promising" rather than "promising". The Table has underestimated the benefits of transit improvements. Many costs of car-based transportation have not been considered, including loss of heritage buildings, loss of public space, health costs, and reduction of agricultural land and wildlife habitat. (Halifax session)
- Strathcona County Engineering and Environmental Planning and Transport 2000 support improvement of the transfer of people between airports, inter-city buses, rail, light rail, and local buses. (written submissions)
- Dr. Mark Bunting argues that public transport needs to be more adaptable to meet a wider array of consumer interests, in contrast to the "mass transit" mentality. A genuinely integrated transport system would be oriented to customer interests in high performance door-to-door movement at a standard approaching what the car offers. (written submission)
- Many other groups support measures to strengthen transit, including Transport 2000 (emphasis on commuter rail), Climate Change Caucus of the Nova Scotia Environment Network (emphasis on light rail transit), Canadians for Responsible Northern Development (emphasis on electricity-based transit), Citizens for Better Transportation in Winnipeg (emphasis on light rail transit, with reduced fares to boost ridership), Équiterre, Resource Conservation Manitoba, and Toronto Hoof and Cycle Courier Coalition.
- Comments from the floor: If vehicle manufacturers aren't going to have a significant number of improved vehicles on the road until 2030, should they be contributing instead by subsidizing mass transit? (Regina session) Productivity goes up in the work force when people take the bus. For instance, Continental Meat Packers in Edmonton is giving bus passes to employees. Morale has increased 68% inside the plant. (Regina session)
- Breakout groups: All groups support transit service and transit infrastructure enhancements, with several groups suggesting funding from fuel taxes (existing or new) and/or significant financial support from senior governments.
- Additional breakout group comments: *Calgary, Toronto and Montreal* There is a need to improve intermodal connections in the urban setting (for instance, park and ride and airport/transit interfaces). *Regina* The group had divided views on the importance of transit pricing. Transit automatic vehicle location has been tried in Regina but was cost prohibitive. *Halifax* Information/education is needed to explain the rationale for a fuel tax (to encourage use of alternatives to the car, and to provide the necessary infrastructure). Subsidized passes (transit pricing) are needed for institutions such as the

universities. *St. John's* The transit companies need to consider alternatives such as smaller vehicles for off-peak periods. Road engineering needs to consider transit needs. *Winnipeg* Transit pricing targeted to individual groups is needed. New approaches are also needed, such as park and ride, car sharing, Jitney service, taxi service, dial-a-ride, etc. *Toronto* One group recommended further study of the transit pricing measure. Different breakout groups reached differing conclusions concerning the value of smart cards. *Calgary* Traffic management measures that ease the flow of transit and help keep buses on schedule are needed. *Montreal* Automatic vehicle location could be part of a series of advanced technologies for transit. The smart card is a tail-end measure, not a starting measure.

BUNDLE: **Transportation Demand Management (TDM).** This bundle includes telecommuting (measure A5L), car sharing (A7), parking pricing (A10L), ride sharing (A6L), urban road pricing (A8), and related measures.

SUMMARY: **Strong support for efforts to reduce demand. Most individual measures supported, with some reservations in the case of certain measures.**

COMMENTS:

- Better Environmentally Sound Transportation: Comprehensive TDM can be very effective. Integration of urban transportation measures can lead to synergistic effects. (Vancouver session)
- The NWT Department of Transportation: Telecommuting can also reduce long distance air travel for business trips in remote areas. (Calgary session)
- City of Montreal supports car sharing and suggests that governments have a role to play in promotion and enhancing operating conditions (parking, commercial networking with public transportation). The City believes that increased parking fees could lead to distortions that would be detrimental to the downtown core, and therefore further analysis is required. (Montreal session)
- The City of Edmonton has parking management initiatives in its Transportation Master Plan (Calgary session). STOP and Société de transport de l'Outaouais (STO) support parking pricing (Montreal session). Resource Conservation Manitoba supports road and parking pricing (and elimination of tax free parking benefits) (Winnipeg session). BC Transit believes selective road tolls and higher parking charges will be needed to force people to rethink commuting habits. (Vancouver session)
- The Canadian Automobile Association does not support increased parking pricing or increased user fees for use of the road (road pricing). (written submissions)
- Équiterre supports taxes on parking, and road tolls. (Montreal session)
- The experience of the Ecology Action Centre in trip reduction programs indicates that employers need a budget and assistance to implement such programs. Incentives such as HOV lanes, a good transit service, or HST exemption for vanpool operators are also required. (Halifax session)
- Breakout groups:
  - *Calgary, Regina, Winnipeg, Toronto* and *Vancouver* groups support telecommuting as a promising or most promising measure (and *Calgary* notes the opportunity to use communication technology to reduce need for long distance travel). *Winnipeg* suggests that government lead by example. *Montreal* concluded that the potential of telecommuting has not been demonstrated.
  - *Regina* and *Montreal* groups suggest that car sharing has potential, particularly in the larger centres. *Toronto* supports this as a private sector initiative; intermodal support is required.
  - *Winnipeg* group supports increased parking fees and parking cash outs to reduce spaces available. *Regina* group suggests that parking prices have limited application as a stand-alone measure, but more value as part of a bundle of measures. *Vancouver* group notes that parking pricing has to be linked to better transit service or it will drive employers and businesses out of downtown. *Toronto* group was also concerned that parking pricing could contribute to urban sprawl. A possible solution is to apply the pricing region wide. One *Montreal* group considers

parking charges a most promising measure; another group proposes the alternative of a ceiling on parking supply.

- *Halifax, Montreal, Vancouver, Toronto* and *Regina* groups support van pooling and ride sharing. *Vancouver* group recommends that the current focus on ride sharing be expanded to a broader focus on employee and school trip reduction. Shared ride taxis may also have application.
- *Vancouver* group believes road pricing may be feasible in Vancouver, because plans are already in place to implement some road tolls. Any tolling should be time variable (congestion pricing).

BUNDLE: **Inter-urban Passenger Travel.** This bundle includes intercity bus subsidy (measure B1), high-speed rail in the Quebec-Windsor corridor (B2), and other initiatives relating to interurban passenger travel but not included in the Options Paper.

SUMMARY: **Many participants are concerned that there are no promising or most promising measures relating specifically to interurban passenger travel, and recommend additional measures in this area.**

COMMENTS:

- Transport 2000 considers the interurban measures in the Options Paper to be weak, and makes the following recommendations: (presentations at several locations)
  - Place emphasis on rail for inter-city travel. The Options Paper incorrectly suggests that passenger rail is less efficient than the private auto. The analysis uses current system average data, based on obsolete VIA technology, and does not consider marginal trip impacts. Adjusting for these factors results in significant GHG advantages for inter-city rail compared to the private auto.
  - For passenger travel, we must fill buses and trains that are already travelling, to minimize marginal trip impacts. One way to encourage this is to allow carriers to apply maximum yield pricing, and to exempt inter-city surface public transport from GST and PST.
  - Use of diesel locomotives in the corridor for relatively short trains is inefficient. VIA should acquire modern passenger diesel multiple-unit (PDMU) trains for corridor use. These trains can be combined and split, and combined with freight diesel multiple unit sets.
  - Inter-city bus and rail should not be seen as competitors – the competition for both is the car. Rail trips are linked to bus trips as feeders to trains, and as a return-trip alternative. There is ample evidence that intercity rail will bring people out of the car. The bus does not achieve this.
- R.L. Spack Transportation Consultant Inc.: Rail is more fuel-efficient than cars and aircraft per passenger-km. We therefore need rail, particularly in the Windsor-Quebec corridor, with improved speed and frequency of service. The vision should be based on access: a bus network with a rail spine, connected to airports and urban rail. (Montreal session)
- Other groups supporting enhanced inter-city rail include the Climate Change Caucus of the Nova Scotia Environmental Network and the Better Transportation Coalition (Halifax and Toronto sessions).
- Breakout groups: *Calgary* General support for intercity rail where volume is sufficient. *Montreal* The high-speed rail is a not a very promising measure, but it must be retained.

BUNDLE:	**Aviation measures.** This bundle includes short-term aviation measures (measure D1), and two measures rated as unlikely by the Table: early aircraft replacement (D2), and limitation of air travel activity (D3).
SUMMARY:	**Aviation measures received little comment. Issues related to the limited extent of the promising and most promising measures, the likelihood that the measures are already in progress, and concerns about possible limits to aviation activity.**

COMMENTS:

- The Centre for Sustainable Transportation: The Centre states that domestic aviation is the fastest growing mode considered by the Table, and that the global warming effect of aircraft emissions at 10,000 metres is 2-4 times greater than emissions at ground level. For domestic aviation, the Centre is concerned that the GHG increase is 7 MT, yet the most promising and promising measures address only 1.6 MT of this increase. (Toronto session)
- The aviation industry and airport authorities would mostly support the operational and technological measures suggested by the Table (measure D1). The airline merger is likely to result in some accelerated fleet replacement (measure D2). The main concern with the Report's analysis is the measure to limit aviation activity (measure D3), and specifically the idea of a 30% reduction of the domestic fleet. This would have an impact on both carriers and airports. (Vancouver session)
- NWT Department of Transportation: Air transport is the primary means of passenger travel in the NWT. The air transport measures may be more difficult to implement in the NWT, because many carriers are small with limited resources. Many of the working planes are older aircraft that cannot be replaced, and passenger volumes and airstrips cannot support larger planes. (Calgary session)
- Breakout groups: *Toronto* A large package of aviation measures will be required, involving the participation of operators, regulators, air traffic controllers and airports. *Regina* The short-term aviation measures listed in the Options Paper (D1) are already being implemented.

MEASURE:	**Tax exempt transit passes (measure A20)**
SUMMARY:	**General support for this measure, particularly if coupled with a larger set of transit related measures. This measure was often linked to elimination of tax exemptions for free parking benefits.**

COMMENTS:

- Many presenters at the sessions supported this measure: BC Transit (Vancouver session), OC Transpo and Amalgamated Transit Union (Toronto session), Société de transport de l'Outaouais (STO), City of Montreal, CCMM-CNTU/FEESP-CNTU and Mouvement au Courant (Montreal session).
- CPPI believes this measure may be worthwhile on a voluntary basis, but also believes that the cost-effectiveness analysis should be revisited. (presentation at several locations)
- Breakout groups: General support from *Calgary, Regina, Halifax, Vancouver, Winnipeg,* and *Toronto* groups for tax exempt transit passes as a promising or most promising measure. The measure must be associated with improvement of service and infrastructure and must extend to all users (not only new users). The *Montreal* group recommended that the allowance not be given through employers (too complex, does not benefit unemployed individuals).

MEASURE: Bicycle and Pedestrian Infrastructure (measure A1L)

SUMMARY: General support for this measure

COMMENTS:

- Vélo Québec supports inclusion of bicycle use and walking among the promising measures. The organization published a study in 1999 that presents recommendations to increase the complementarity of bicycle use and public transportation, including a series of measures to promote intermodal transportation (e.g., parking, access to light rail, development of surroundings, etc.). (Montreal session)
- The City of Edmonton includes enhanced non-motorized travel opportunities, and better integration of motorized and non-motorized alternatives, in its Transportation Master Plan. (Calgary session)
- The City of Regina has a policy statement regarding sustainable transportation, which supports bicycle and pedestrian alternatives. (Regina session)
- Breakout groups: General support from *Montreal, Halifax, Regina, St. John's, Toronto* and *Vancouver* groups for improved bike and pedestrian infrastructure.

NEW MEASURE: Distance-based vehicle insurance (closely related to measure A9, distance-based vehicle charges)

- Proposal from the Victoria Transport Policy Institute. (Vancouver session)
- Distance-based vehicle insurance is an alternative to pricing insurance by vehicle year. It converts an existing fixed cost into a variable cost, which provides an incentive to reduce mileage. This option would achieve 1/3 of the reduction required in personal travel to meet the Kyoto target.
- This concept was supported by other speakers/groups who addressed the subject, including the International Centre for Sustainable Cities, BC Transit, Management of Technology Services, and Better Environmentally Sound Transportation.
- Société de l'assurance automobile du Québec supports the polluter pays principle (via a fuel tax to cover the cost of measures) rather than user pay. The organization also believes that behaviour is more likely to be affected if fees or charges are visible. Some groups have suggested including GHG charges within licensing or insurance costs. Rather, they should be distinct. (Montreal session)
- Other comments: Distance based insurance could negatively affect resort areas. An alternative system could link transit passes and car insurance to avoid double payment (Vancouver session). Distance-based insurance does not recognize GHG reductions by users of alternative fuels who drive high mileage each year (based on distance and not GHG emissions). (Winnipeg session)
- Breakout groups: General support from *Winnipeg, Toronto,* and *Vancouver* groups. The *Winnipeg* group noted that a pilot study could be initiated in Manitoba, as the province has a single crown agency for auto insurance.

NEW MEASURE: Integrated Provincial/Regional Transportation Authority

- Proposal from Calgary and Regina breakout groups to consider creation of provincial/regional transportation authorities, as in Europe. No other comments on this proposal.
- The authorities would have responsibility for coordination of services between modes and systems, to reduce duplication and increase efficiencies. This could include transit, intercity bus, school buses, specialized services for special needs, and links between these modes and air/rail. The concept is not a large bureaucracy, but rather a mechanism to ensure that the various service providers and modes are acting in concert (serving the demand in the most efficient manner). The goal would be increased

efficiency and widespread modal shift.
- This measure links to the transit fare smart card (B14), which could be expanded to allow people to travel in rural and urban areas on various forms of transport using a single smart card (with revenues credited to the carrier).

NEW MEASURE: School car trip reduction program

- York University Centre for Applied Sustainability states that recent research on school drop-off suggests a possible new measure for the Table to consider. (Toronto session and written)
- The evidence indicates that parents change behaviour if it is linked to impacts on children. Two successful programs in Canada, "Way to go! Schools" in B.C. and "Active and Safe Routes to School" in Toronto, influence behaviour by building on traffic safety concerns regarding school drop off and pick up times.
- Many participating schools report a 50% increase in the number of children walking to school. There is also anecdotal evidence that parents who participate also change other travel patterns. Participants are likely to be an educated and receptive audience for other GHG reduction measures.
- Such programs provide cost-effective and sustainable change in mobility patterns. Their community-based approach may be more efficient than conventional public education and awareness campaigns.

NEW MEASURE: Power Two Wheelers (motorcycles)

- Proposal from BC Coalition of Motorcyclists. (Vancouver session) No other comments on this proposal.
- The Coalition recommends support for Powered Two-Wheelers (PTWs) to reduce GHG emissions. PTWs use 20-50% less fuel than the average car, with equivalent CO_2 reductions. To increase motorcycle use, government agencies should promote and treat PTWs as a solution, not a problem. It is also necessary to remove obstacles and provide incentives to motorcycle use (for instance, operator rather than vehicle insurance, affordable operator training, sales tax relief as for bicycles in BC, and free and secure parking).

NEW MEASURE: Additional New Measures

- In the longer term, the Sustainable Calgary Society suggests that limits on automobiles could be specified (e.g., a limit on total horsepower per family). (written submissions)
- Breakout groups in *Halifax* and *Regina* suggested the following additional new measures for consideration. Further details were not provided:
  - Measure to limit car idling (through either education or regulation).
  - Measures to reduce single occupant vehicle travel in rural areas, through transit services operating small buses, and use of communication technology to organize intercity ride sharing.
  - Measure to improve school bus load utilization (by minimizing unproductive empty bus mileage). For instance, daytime parking of the buses at school reduces mileage on the buses, leading to reduced fuel use and emissions and increasing bus life from 8 to 12 years. This would require policy changes at the Board of Education level, because buses are currently funded on a per mile basis, rather than a loaded mile basis.

Other Comments

Participants provided comments on other measures in the Passenger Package:

- Driver education (measure A16H) is a component of the larger need for public education and awareness, discussed in Section 3.1 of this report. In addition, breakout groups in Montréal, Toronto, St. John's and Regina specifically supported driver education/training. The St. John's group recommends a hard-hitting approach like Participaction, to teach people to think automatically about fuel consumption.
- CPPI and Resource Conservation Manitoba support vehicle scrappage programs (measure A14) (Halifax session and written submissions). Sustainable Calgary Society advocates, as an alternative to government participation in scrapping of older automobiles, a policy requirement for manufacturer/seller involvement in vehicle take-back (written submissions). A Calgary breakout group believes that scrappage incentives for high emission older vehicles, or licence fee disincentives, appear to be relatively low cost.
- CPPI and Resource Conservation Manitoba support vehicle inspection and maintenance programs (measure A13). STOP and Association québécoise de lutte contre la pollution atmosphérique (AQLPA) support such programs, since they also contribute to other objectives such as air quality improvement (Montreal session). Several Montreal breakout groups supported inspection and maintenance programs, and one recommended fees and rebates combined with inspection and maintenance, in part to raise public awareness.
- The NWT Department of Transportation notes that a code of practice for ferries (measure G8) may be helpful for the five vessels operating in the NWT, although during operating season the ferries operate constantly with short turnaround times (Calgary session). One Vancouver breakout group concluded that requirements that would be called for by a code of practice are already in place with BC ferries (i.e. there is not much remaining potential).
- BCG 4Pro Systems supports compressed natural gas (CNG) ferries (measure G4) as a most promising measure, and notes that TransLink is demonstrating that natural gas can work in ferries (Vancouver session).
- Transport 2000 has proposed electrification of urban transit and rail. See the Freight Package for a summary.

A number of additional general points were raised in open discussion at several of the meetings:

- It is difficult for a small city to implement the same programs as a larger city. In a compact city, bikes and walking are viable, but the reverse may be true with transit. Is this something we should continue to work on, or should we focus elsewhere? There is a need to distribute information and share best practices among smaller cities. (Regina)
- Simply providing more of the same thing probably won't work. To increase ridership, transit needs to provide the convenience and comfort of cars. Otherwise we won't get a shift to transit. (Halifax)
- Part of the problem with transit could be addressed through more innovative delivery options, including consideration of privatization/commercialization, deregulation of taxi services, shared taxis (e.g., jitneys) and other market-based solutions. (Winnipeg)

- Many opportunities can arise from collaboration among stakeholders. For instance, the unions should get together with the provincial government to discuss transportation services for seniors. The empty school buses could pick up seniors, and transit buses could be used during off-peak periods. There is much that can be done; the administrators, bureaucrats, and unions need to sit down together. (Regina)

ROAD INFRASTRUCTURE

Introduction

The discussion below presents stakeholder input on the Table's road infrastructure package, and specifically on the following measures:

- Speed limits (bundle)
- Intelligent Transportation Systems (bundle)
- Concrete pavement
- High-occupancy vehicle (HOV) lanes.

Overview of Stakeholder Input

Less stakeholder input was received regarding road infrastructure than most other packages. The most important finding is the ***substantial support for enforced and reduced speed limits***, which together represent about two-thirds of the GHG reduction potential among the analysed measures in the package. The input also ***supports most of the other most promising, promising, and less promising measures*** proposed by the Table, with mixed support for HOV lanes and reservations from some stakeholders regarding some intelligent transportation system (ITS) applications.

Stakeholders hold ***differing views regarding investment in road infrastructure***. Some argue in favour of reduced investment in roads, in order to increase budgets for alternatives and discourage road traffic. Other stakeholders support investment in road infrastructure, for economic and environmental reasons.

Detailed Input on Measures

BUNDLE:	**Speed limits.** This bundle includes enforcement of current speed limits (measure B4) and reduction of speed limits (B5).
SUMMARY:	**There is broad support for lowering and enforcing speed limits, coupled with recognition of the challenges of enforcement.**

COMMENTS:

- The Saskatchewan Trucking Association, Manitoba Trucking Association, Atlantic Provinces Trucking Association and Canadian Trucking Alliance support enforcement of the speed limits (Written submissions for STA and MTA; Halifax for APTA and CTA). The APTA has petitioned unsuccessfully for reduction of speed limits to 95 km/hour. (Halifax session)
- Comment from the floor: The MTA believes there is consensus within the trucking industry on a

limit of 90/95 km/h provided it is applied equally to all vehicles. There are mixed views on speed limits for trucks only. (Winnipeg session)

- Stevens (University of New Brunswick) believes that cutting and enforcing speed limits will demonstrate that governments are serious about GHG reduction. Economic instruments such as higher fuel taxes would not achieve this, and would be viewed as a tax grab. (Written submission)
- STOP, the New Brunswick Lung Association, and Resource Conservation Manitoba support reduced speed limits (Montreal and Halifax sessions)
- Atlantic Provinces Transportation Commission suggests looking at speed control, not speed limits. This refers to variable speed control mechanisms that take account of factors such as vehicle, traffic, weather, and environmental objectives, coupled with driver education, information technology, and enforcement technology (of which photo radar may be only one example). (written submission)
- Breakout groups concerning reduced speed limits: *Regina, St. John's, Halifax, and Montreal* Reduced speed limits are a promising or most promising measure. Several of the groups noted that the limits should apply to all vehicles. Several groups also noted the difficulties of enforcement. *St. John's and Halifax* Supplementary enforcement mechanisms will be required (e.g., photo radar). *St. John's* Newfoundland has a long road system, and people tend to measure distance in hours rather than miles. An educational process is required, to convince people that the time aspect is not the most important consideration. *Halifax* Begin by enforcing existing speed limits, and then reduce these limits at a later stage. Public support is unlikely if the only argument is GHG emissions, but enforcement of existing speed limits may be more saleable if linked to fuel efficiency.
- Breakout groups concerning enforcement of current speed limits: *Calgary, Winnipeg and Toronto* Enforcement of existing speed limits is a most promising measure. *Calgary* This measure should receive the greatest emphasis among the road infrastructure measures. *Winnipeg* Limits should apply to all vehicles. The measure could also involve the use of technology (e.g., surfaces treated to create sound resonance to slow traffic). Schools could play a part in early education and creating public acceptance. *Toronto* Within the group there was significant debate about how to enforce speed limits (e.g., photo radar). *Vancouver* The group questions the impact estimates resulting from speed reduction, given the difficulty in enforcement.

BUNDLE: **Intelligent Transportation Systems (ITS).** This bundle includes adaptive traffic signals (measure B10), commercial electronic pre-clearance (B15), incident management systems (B9), advanced in-vehicle control systems (B16), traveller information systems (B11), and electronic toll collection (B13).

SUMMARY: **There is support for several individual measures within this bundle of measures. Dissenting views are based on concern that the measures will increase the number of cars on the road**

COMMENTS:

- Intelligent Transportation Systems Canada states that ITS achieves GHG reductions through reductions in vehicle-miles travelled, travel times and congestion. ITS can be implemented quickly and incrementally. Specific comments: (Toronto session)
  - The measures identified by the Table relate mainly to infrastructure. There is a need to look at the broader scope of ITS, which addresses passenger vehicle traffic, transit, commercial vehicles and the interrelationships of these modes.
  - The concern related to ITS about increasing traffic is not valid. The evidence shows no such increase in typical applications. ITS is a platform for many demand measures.
  - There is a need for improved funding, inter-agency cooperation, public education, research, and demonstrations. Canada is an ITS leader; additional funding would provide economic benefits.

- The City of Edmonton recently completed a Transportation Master Plan, which includes upgrading traffic control systems and signal coordination; freeway and ramp management systems; traveller information systems; and incident management systems. The City supports in principle the elements of the Options Paper that are consistent with these measures. (Written submissions)
- The Saskatchewan Trucking Association, Manitoba Trucking Association, Atlantic Provinces Trucking Association and Canadian Trucking Alliance consider ITS to be a more promising measure.
- The Climate Change Caucus of the Nova Scotia Environmental Network and Better Environmentally Sound Transportation argue that measures to reduce congestion and smooth traffic flow, such as ITS, allow increased traffic and GHG emissions. Investing in light rail transit (LRT) is a better long-term solution. ITS measures can however be used to increase transit priority and give a competitive advantage. West Coast Environmental Law Association is also concerned that ITS (and similarly HOV lanes), could increase traffic volumes and emissions if implemented inappropriately, due to latent demand. (Halifax and Vancouver sessions, written submissions)
- Breakout groups: *Regina* Commercial vehicle electronic clearance (harmonized with the U.S.) and incident management are most promising. *Calgary and Toronto* Adaptive traffic signals, commercial vehicle electronic clearance, and incident management are most promising measures; Toronto group also supports electronic toll collection and vehicle interaction. Another Toronto group supports enhanced ITS systems involving total system improvements (i.e. intermodal), and recommends the federal government initiate a national demonstration program. *Halifax* Advanced traffic signal controls have potential for larger municipalities. Halifax's SCOOT system is successful and is being expanded. *Montreal* The group supports electronic toll collection. *Vancouver* The ITS measures are a most promising measure, taken as a package rather than individually. (The ITS measures should be implemented at the same time as other measures such as urban planning and transit, because otherwise improvements in traffic flow will simply result in more vehicles on the road.) Electronic toll collection should be tied to road pricing in urban areas, to reduce the number of vehicles.

MEASURE: **Concrete pavement (measure B7)**

SUMMARY: **Support from the Canadian Portland Cement Association and some other stakeholders for upgrading concrete pavements to a promising or most promising GHG reduction measure.**

COMMENTS:

- The Canadian Portland Cement Association believes that the option of rigid pavements made from concrete has not been accurately presented in the Options Paper, especially as a solution for high volume traffic corridors, and should be elevated to the level of promising or most promising GHG reduction measure. The association states that concrete roadways offer environmental benefits (reduced fuel consumption, reduced GHG, improved air quality, and conservation of aggregate), economic benefits (no weight restrictions, more efficiency), and proven performance. This option can be easily implemented with little risk. The Table's analysis only considers a portion of the potential to reduce GHG emissions by utilizing concrete pavement, since it considers only part of the National Highway System, and does not consider roads under municipal jurisdiction. Research on fuel savings is ongoing. (presentations to all sessions, and written submission)
- A number of participants in each location expressed interest in concrete pavements as a possible option for consideration in their regions.
- Strathcona County notes that concrete is uneconomic in oil producing areas; asphalt is uneconomic in areas that produce limestone and gypsum. (written submissions)
- Breakout groups: *Vancouver, Toronto, Montreal* Rigid pavements are a promising or most promising measure. *Calgary* This option may have more potential than indicated in the Options Paper.

MEASURE:	**High-occupancy vehicle (HOV) lanes (measure B8)**
SUMMARY:	**Mixed support for HOV lanes**

COMMENTS:

- Transport 2000: HOV lanes result in more vehicles on the road and hence more emissions, and therefore should not be supported. Unlike HOV lanes, exclusive bus lanes do work. Separate approach lanes for transit at traffic signals, and an advanced signal phase for transit, should be considered. (Calgary session and written submission)
- Better Environmentally Sound Transportation: The road infrastructure package should examine strategies of removing road space by, for instance, creating HOV and transit lanes from existing general purpose lanes. (Vancouver session)
- Breakout groups: *Halifax* Potential is low in the Maritimes, where six lane roads are rare. *Montreal* HOV lanes are a promising or most promising measure. *Toronto* HOV lanes for urban transit are a promising or most promising measure.

Other Comments

Participants provided comments on other measures in the Road Infrastructure Package:

- Breakout groups in *Regina, Calgary, Toronto and St. John's* consider synchronization of traffic signals (measure A15) to be a promising or most promising measure in urban areas. St. John's also noted that the location of existing signals should be reviewed as part of a total system, and that analysis of improved signals is needed to demonstrate that this is an appropriate use of resources.
- A group in *Regina* supported more frequent resurfacing (measure B6) as a promising measure, but raised issues of cost-benefit, funding and balance between local and national road systems. A group in *Toronto* supported more resurfacing in rural areas for roads that are seriously degraded, but did not reach consensus for urban areas. A group in *Calgary* concluded that, in northern regions, surfacing of highways offers potential for savings, as the primary highways are at present gravel.
- *Vancouver and Montreal* groups consider road pricing (measure B3) to be promising or most promising. Better Environmentally Sound Transportation supports road pricing as a means of correcting subsidies to road freight. (Vancouver session) (Note: Additional comments on urban road pricing can be found in the Passenger Package (measure A8)).

In addition, participants made the following additional observations:

- The City of Vancouver notes that the road infrastructure measures proposed by the Table may sometimes be counter-productive (by making roads more efficient, we encourage more driving and more miles). The City of Montreal notes that investing in public transit infrastructure could mean a clear choice to invest less in the development of roads. The Climate Change Caucus of the Nova Scotia Environmental Network recommends that funding for improved transit and interurban rail could come from diversion of existing and planned budgets for road expansion. On the other hand, the trucking associations

(MTA, STA, APTA, and CTA) consider investment in improved road infrastructure to be a most promising measure.

- The BC and Yukon Territory Building and Construction Trades Council referred to ongoing negotiations between the federal government, the provinces, and municipalities to commit to a National Highways Investment Strategy (NHIS). The NHIS will have GHG benefits through road improvements, and also elements such as HOV lanes, bus lanes, and Park and Ride parking lots. Major financial commitments are required, but the gains are many. The economic benefits to government, business, and the workforce offset the cost of such projects. (Vancouver session and written submissions)
- Winnipeg and Montreal breakouts: All levels of government need policies concerning maintenance of existing infrastructure. Lack of maintenance leads to less efficiency, more cost and emissions. A long-term transportation investment plan should be assembled.
- Toronto breakouts: Measures relating to road infrastructure also need to be integrated with other infrastructure requirements, such as consideration of alternative fuel supply.
- Vancouver breakouts: There is a need for measures directed at rural areas, which have different needs from urban areas.
- Montreal breakouts: The Options Paper lacks infrastructure measures that support traffic demand management, and does not identify demand management as an objective. The effect of individual measures may be small, but cumulatively they are valuable.
- Calgary breakouts: In support of sound decision-making, there needs to be full cost analysis of infrastructure investments, looking at total social benefits and costs.

FREIGHT

Introduction

The discussion below presents stakeholder input on the Table's freight package, and specifically on the following measures:

- Modal Shift/ Intermodal Freight (bundle)
- Trucking Operations (bundle)
- Longer Combination Vehicles (LCVs, or long trucks)
- Commercial Driver Training
- Capital Cost Allowances for Rail Freight Cars and Locomotives
- Accelerated Truck Scrappage
- Electrification of Railways
- Additional New Measures.

Overview of Stakeholder Input

For the freight package, a concern raised by many participants is the apparent absence of measures for modal shift. There is broad support for ***measures to encourage increased intermodal co-operation and shipping***. Some stakeholders also recommend more aggressive action to cause significant modal shift. Otherwise, participants ***generally supported the Table's***

most promising and promising measures, with the exception of the long truck measures, which attracted some strong opposition, but were also supported by other stakeholders.

Detailed Input on Measures

BUNDLE:	**Modal Shift/Intermodal Freight**. This bundle presents input concerning modal shift from truck to rail, and modal shift to marine shipping. Several modal shift measures are included in the "unlikely" category in the Options Paper.
SUMMARY:	**Many participants argue that modal shift has much greater potential than is reflected in the Options Paper, and that significant measures should be implemented to cause this shift. Conversely, trucking industry representatives and some other participants concur with the findings of the Options Paper. Most participants agree there is unrealized potential for increased intermodal cooperation and multi-modal (truck/rail) freight.**

COMMENTS:

Truck to rail

- Management of Technology Services: The Options Paper analysis greatly underestimates the long term potential for road-to-rail modal shift and overestimates the cost per tonne of GHG reductions. This is due to erroneous assumptions concerning capacity, infrastructure investment, and market potential. The analysis did not account for external costs (e.g., repairing highways) and other factors. Road-to-rail modal shift belongs in the promising or most promising category. (written submission)
- Transport 2000: A gradual transfer of heavy or long haul freight from truck to rail offers one of the best opportunities to reduce GHG emissions. The Table needs to propose radical modal shifts and the economic instruments to achieve such shifts. Recommendations are needed regarding restoration of rail branches and sidings where possible. The integrity of abandoned rail corridors should be protected. Canada needs a Rail Renewal Task Force or Commission. The Options Paper also underestimates the potential for intermodal rail-truck operations. There should be recommendations encouraging this trend. We should also look at combining multiple unit trains for freight and passengers. (presentations at several locations and written submissions)
- CP Rail: Intermodal rail traffic is the fastest growing part of CP Rail's business, and the company is investing significant resources in this area. The ExpressWay (CP) and RoadRailer (CN) initiatives represent a synergy and partnership with trucking, not a competition. (Calgary session)
- Climate Change Caucus of the Nova Scotia Environmental Network: More should be done to shift freight traffic on to rail. We need to encourage short line rail, and encourage private shippers and trucking companies to get into the rail business. (Halifax session)
- Other groups that support shift to rail include Resource Conservation Manitoba, New Brunswick Lung Association, Canadians for Responsible Northern Development, Better Environmentally Sound Transportation, Gaia Group, and R.L. Spack Transportation. Linda Phillips suggests opening track use to all companies able to acquire rolling stock. This would place railroads on the same footing as highways, and trucking companies could go bi-modal. (various sessions, written submissions)
- The Saskatchewan Trucking Association, Manitoba Trucking Association, Atlantic Provinces Trucking Association and Canadian Trucking Alliance made presentations/submissions stating that modal shift should not be a recommended measure. (The Ontario Trucking Association also supports this view.) These associations agree with the finding that modal shift would be costly and have negligible impact on GHG emissions, and note that trucking is 30-40% more fuel-efficient than 10 years ago. They state that the trucking industry does collaborate with the rail and other modes, and will continue to do so. (Written submissions for STA and MTA; Halifax for APTA and CTA)

- Atlantic Provinces Transportation Commission (APTC) also believes that modal shifts are unrealistic in Atlantic Canada, and would be an overly costly solution. The economy in Atlantic Canada is shifting to a North-South focus, and there is no viable rail system in place today that can handle this traffic. (Halifax session)
- Breakouts: *Vancouver* The group supports a shift of goods from road to rail and marine. City intermodal yards are a most promising measure, which will improve land use planning and encourage modal shifts. *Toronto* The growth in cross-border freight traffic is a trend that provides opportunities for rail and truck to work together using an intermodal concept. New measure suggested: An intermodal incentive program, involving a regulated incentive to use intermodal shipping (the cost/benefit would need to be determined). *Regina* Rail-truck intermodal partnerships for container units have potential, and were discussed positively by rail and truck stakeholders at the table. There are barriers, and more research is needed. *Calgary* Intermodal freight needs to be encouraged. *Winnipeg* Modal integration could be facilitated through use of e-commerce and other information technologies. There is a need for discussion of intermodal options and how to increase truck-rail partnerships. Intermodal cooperation between truck and rail is already present. *Montreal* The Table should analyse modal shift using case studies: how to optimize via incentives, regulation or deregulation. Investment in infrastructure to facilitate modal transfer is also recommended.

Marine Shipping

- St. Lawrence Economic Development Council was surprised to note that modal shifts to marine shipping had not been retained as a priority GHG solution (measures C2, C5, and C6). The Great Lakes-St. Lawrence system has real potential to provide an alternative. Two thirds of Canada's trade occurs in this region. By not creating conditions that are more favourable to shipping, Canada has allowed its position regarding this type of transportation to deteriorate. (Montreal session)

BUNDLE: **Trucking Operations**. This bundle includes truck speed control to 90 km/hr (measure F2B), truck load matching (F3), truck lubricants (F6), and truck idling (similar to F11).

SUMMARY: **Speed control, load matching, and lubricant measures are widely supported, in some cases with qualifiers (e.g., lower speed limits for all vehicles). An idling reduction measure is also suggested.**

COMMENTS:

Truck Speed Control To 90 km/hr (F2B)

- Note: This measure is related to the reduced speed limits measure (B5) discussed in the road infrastructure package. Some comments did not distinguish between these two measures.
- APTA and CTA: The majority of companies interested in remaining viable have implemented speed control systems. However, the associations don't represent all of the industry. The only way to get the independents and owner-operators to comply is through regulation. The concern about safety with differing speed limits can be addressed by lowering speed limits for all vehicles, which would also further reduce emissions. (Halifax session)
- Breakouts: *Toronto, Regina, and Vancouver* groups consider truck speed control to be a most promising measure. Vancouver and Regina suggest the same limits for all vehicles (100 km/h suggested by Vancouver). *Montreal* This measure must be imposed equitably on all truckers. Responsibility lies with the federal and provincial governments. *Calgary* There may be a safety issue if speed limits are different for different vehicles. Until this issue is addressed, there is not a lot of support for this measure. There is also the question of enforcement. *Winnipeg* Many operators are already observing a 90 km/h limit. This should be applied evenly.

Truck load matching (F3)

- The Saskatchewan Trucking Association, Manitoba Trucking Association, Atlantic Provinces Trucking Association and Canadian Trucking Alliance support improved load matching as a most promising measure. To take advantage of load matching, there is a need to amend customs and immigration regulations, both in Canada and the U.S., as they relate to transportation.
- The NWT Department of Transportation supports the promising measures, but load matching for trucks is usually not possible in the NWT as imports exceed exports. (Calgary session)
- Breakouts: *Toronto and Regina* Truck load matching is a most promising measure. *Winnipeg* Load matching will depend on regulatory harmonization (e.g., immigration, cabotage). Intelligent Transportation Systems could assist with load matching, and provide a better understanding of truck specifications (e.g., optimal loading), especially for small operators. *Montreal* Load matching requires incentive measures to increase application. The group recommended bundling load matching with centralization of freight distribution in urban environments.

Truck lubricants (F6)

- The STA, MTA, APTA and CTA consider lubricants to be a most promising measure.
- Breakouts: *Toronto and Regina* Lubricants are a most promising measure. *Calgary* This is a good idea, but further analysis is required to prove to industry that this is a viable option. *Montreal* This measure requires promotion by the manufacturers.

Truck idling (similar to measure F11)

- Breakouts: The *St. John's* group recommends an initiative addressing idling of vehicles in the freight sector. This requires education, and pressure on companies to adopt policies that reduce idling. The *Halifax* group also supports a measure to reduce truck idling, and recommends that this measure be extended to cars, locomotives, and aircraft. Resource Conservation Manitoba supports idling restrictions via either regulation or education. To reduce the need for idling, the *Calgary* group suggested use of block heaters in colder parts of the country. A study to confirm benefits is suggested, along with education programs and perhaps increased availability of plug-in sites. *Regina* Block heater technologies (e.g., Proheat) can be used to eliminate overnight idling of diesel engines in cold weather. This technology may be extended to other sectors, including bus and rail.

MEASURE: Longer Combination Vehicles (LCVs) (measures F1L and F1H)

SUMMARY: Strong opposition by diverse groups and individuals. Supported by trucking industry representatives and some breakout groups.

COMMENTS:

- Canadians for Responsible and Safe Highways (CRASH) opposes the Options Paper proposal to allow LCVs in Nova Scotia, Ontario, and British Columbia, arguing that the proposal compromises safety, lacks public support and has little impact on emissions. CRASH states that the US Congress, BC Government, the Canadian Automobile Association and the Québec automobile insurance agency have expressed concern about the safety of LCVs. (Toronto session)
- CRASH submitted copies of letters and resolutions from 89 Ontario municipalities opposing longer trucks. The municipalities range from small townships to the Regional Municipality of Ottawa-Carleton. The resolutions cite concerns over impact on municipal infrastructure and safety. Some resolutions note specific concerns for traffic and safety in small towns. (Written submissions)
- Several individual submissions opposed longer trucks, for reasons including safety, damage to road infrastructure, and increased emissions due to diversion of freight from rail. Submissions support alternative emission reduction measures such as enforcing truck speed limits, using electronic devices to limit truck speed, enforcing proper truck maintenance, enforcing the National Safety Code, requiring mandatory periodic emission checks for trucks, shut down requirements to avoid excess

truck idling, and encouraging use of railways. (Written submissions: Campbell, Oliver, Anderson, Field, Conrod, Weber, Phillips, Kelly)

- Transport 2000 and the Ecology Action Centre do not support longer trucks (Toronto and Halifax sessions and written submissions)
- The STA, MTA, APTA, and CTA made presentations/submissions that support longer trucks. The Ontario Trucking Association supports trials of LCVs under controlled circumstances in Ontario. APTA argues that any diversion from rail would be small. APTA also states that the industry is not looking to put bulk and heavy commodities in long trucks (the measure does not propose weight increases), but is seeking cube and floor space. (Halifax session for APTA and CTA; written submissions for STA and MTA)
- Breakout groups: *Calgary* The group supported continued use of longer trucks in Alberta, but noted that public input on this issue may be missing. The group did not take a position on Canada-wide implementation. *Regina* The group moved this measure to "most promising", noting that long trucks are already in Saskatchewan. *Toronto* The group did not reach agreement on this topic. *Winnipeg* This a most promising measure, requiring extension of current permits through regulatory harmonization between provinces and with U.S. states. Both levels of government have a role to play. The long trucks measure should be bundled with reduced speed limits.

MEASURE: **Commercial Driver Training (measure F10)**

SUMMARY: **General support for driver training regarding energy efficiency, for drivers of trucks and other freight modes.**

COMMENTS:

- The Saskatchewan Trucking Association, Manitoba Trucking Association, Atlantic Provinces Trucking Association and Canadian Trucking Alliance support improved driver training relating to fuel efficiency and emissions. (Written submissions for STA and MTA; Halifax for APTA and CTA)
- The NWT Department of Transportation suggests promotion of company-initiated driver reward programs, based on fuel conservation. (Calgary session)
- Breakout groups: General support from *Montreal, Vancouver, Toronto, Halifax, Calgary, Winnipeg and St. John's* groups for strengthened truck driver training. Most groups believe that responsibility would be shared between provincial government agencies and the industry. The NRCan FleetSmart program is useful, and requires more promotion. *Montreal* The group suggests a regulatory amendment to make training compulsory. *Vancouver and Regina* Employers could use financial incentives for their employee drivers, to encourage efficient operation. *Halifax* Training should be updated periodically. In government procurement, GHG activities like NRCan's FleetSmart could be required (this was not agreed to by all). *Winnipeg* The opportunity applies especially to smaller operators, and should include training for corporate management. Government funding is required.

MEASURE: **Accelerated Truck Scrappage (five years) (measure F8C)**

SUMMARY: **Breakout group discussions support an accelerated truck scrappage program.**

COMMENTS:

- The STA, MTA, APTA, and CTA support accelerated truck scrappage as a most promising measure.
- Breakouts: *Toronto* The group supports accelerated truck scrappage as a most promising measure. *Winnipeg* This measure is dependent on the increased capital cost allowance. *Calgary* The group

supported this measure, but reserved judgement on implementation. *Montreal* Accelerated truck fleet renewal is already in place in industry, but would benefit from subsidies or tax measures to encourage its implementation. Care must be taken in encouraging fleet renewal—about half the energy used by a vehicle is required for its manufacture.

MEASURE: **Capital Cost Allowances (CCA) for Rail Freight Cars and Locomotives (measures E6 and E7)**

SUMMARY: **Breakout discussions support improved CCA for railcars and locomotives.**

COMMENTS:

- Breakouts: *Winnipeg* The group supports increased and equivalent CCA for truck and rail (to create a level playing field). *Vancouver* The group supports improved CCA for rail as a most promising measure, to create a level playing field with trucks and encourage turnover of locomotives. *Calgary* The group supports the CCA for locomotives and freight cars, and notes that there may be fewer implementation issues than for truck scrappage. *Montreal* The group supports harmonization with depreciation policies in the U.S., with responsibility falling to the federal government. *Toronto and Regina* The CCA measures are promising and most promising, respectively.
- In addition, several participants provided input on the general question of taxes, allowances, and related matters for rail and other modes. This input is summarized in Section 3.3 of this report.

MEASURE: **Electrification of Railways (measures E4A, E4B, E4C)**

SUMMARY: **Two organizations support electrification of transportation, and a breakout group supports rail electrification as a possible long term option.**

COMMENTS:

- Transport 2000 suggests electrification of rail (and also urban transit). Nuclear power should not be ruled out, and we also have some remaining hydro. We can control emissions at a gas fired power plant better than we can control drivers. (Calgary session)
- The Coal Association supports electrification. The coal industry is looking at zero emissions electricity generation, and has formed an alliance with counterparts in the U.S. The industry expects in 5 years to have a pilot plant operating that demonstrates electricity generation at essentially today's prices, with no GHG, and no other emissions. (Calgary session)
- With rapid electrification, Ontario will need to import power from the Ohio Valley and mid-Western states, generated by coal plants that have not been cleaned up (high emissions). There is a need for a balance between short-term solutions, and well thought out long term solutions. Rushing to certain types of large-scale action will cut off options in the future. (Calgary session)
- Breakouts: A *Toronto* group concluded that rail electrification could be a post-Kyoto measure.

NEW MEASURE: **Additional New Measures**

- The Toronto Hoof and Cycle Courier Coalition recommends proactive measures to increase hoof and cycle courier operations and support implementation of freight rickshaws for light freight. These solutions, combined with a front-loaded user-pay tariff system for downtown freight deliveries, would reduce traffic in our urban centres. (Toronto session)
- The *Montreal* breakout group suggested the following additional measures. Further details were not

provided: (1) Assistance to local rail and coastal shipping in the form of subsidies, support to industry, or regional development policies. (2) Centralization of freight distribution in urban centres, achieved by integrating freight into transportation plans. (3) Reduction of urban traffic congestion due to trucks through the use of reserved bus and truck lanes, variation of schedules, or incentives to shippers. (4) Adoption of a policy statement (or legislation) based on optimization of modes according to economic and environmental criteria; undertaking demonstrations; and harmonization of incentive measures (political, tax and other) for investment in rail and marine infrastructure.

Other Comments

Participants provided comments on other measures in the Freight Package:

- SaskEnergy notes that an OEM liquefied natural gas locomotive is available. The Options Paper considers measure E3 (LNG dual fuel rail) to be "less promising", but there is significant potential once natural gas has been adopted by another sector (e.g., trucking). (Regina session)
- The Toronto breakout group concluded that the code of practice for marine freight (measure G7) should be considered most promising. The Calgary breakout also supports this measure (applicable in northern Canada, not Alberta). Conversely, the Montreal breakout group concluded that this measure should not be one of the most promising.
- The Toronto breakout group rates measure E5 (rail emissions agreement) as promising.

Participants raised the following additional points:

- Saskatchewan Association of Rural Municipalities and Regina breakout group: The main concern in rural Saskatchewan is elevator consolidation and abandonment of rail lines. Farmers will be using more fuel-intensive modes of transport and more fuel as a result. This means that GHG emissions in agriculture will increase relative to the baseline. The farmer should not be penalized for this, and the agricultural sector needs to be recognized for past actions (as part of the baseline process). (Regina session)
- Gaia Group: In rural Saskatchewan, there is potential for increased production to meet local needs, reducing shipping requirements (much of the food consumed in the province is now imported). (Regina session)
- Atlantic Provinces Trucking Association and Canadian Trucking Alliance: There is a crisis in this country caused by rising fuel prices. The trucking industry is under great pressure. If consumers are unwilling to pay a little more, then the industry's attention will be focused on economic survival rather than environmental issues. (Halifax session)
- CAA Ontario: Internet shopping presents a challenge as it leads to more door-to-door delivery. Comment from the floor: It is hoped that e-commerce can be structured so that deliveries of the many parcels can be more efficient that the current situation of many individuals going out to pick up the goods themselves. (Toronto session)
- St. John's breakout: There is a need to harmonize inter-provincial and international weight load restrictions on freight, to allow vehicles to travel with fewer difficulties between jurisdictions. Fuel suppliers offer rebates to truckers for filling up with fuel. This

may serve as a disincentive for reduced fuel use, and lead to increased idling for instance. This area should be investigated.

- Vancouver breakout: The group identified three success factors: Maintain competitiveness with the U.S. through harmonization; maintain safety while reducing emissions; maximize flexibility through, for instance, standardization of containers.
- Toronto breakout: A study of short line rail is recommended, including identification of opportunities and the potential for short lines, emissions and costs.

ROAD VEHICLES AND FUELS

The discussion below presents stakeholder input on the Table's vehicles and fuels package. Because of the nature of the input received, the discussion is divided into two categories: (1) efficiency measures, and (2) fuel-related measures (including alternative fuels).

EFFICIENCY MEASURES

Input is summarized below for the following measures:

- Harmonized Fuel Efficiency Targets (25% by 2010 over current target)
- Feebates
- Heavy Duty Truck Efficiency Improvements
- Hybrid Vehicle Fleet Measure (new measure).

Overview of Stakeholder Input

The automotive industry does not necessarily endorse ***fuel efficiency targets***, and opposes ***feebates,*** considering these to be ineffective, high-cost measures. All other input received on these measures was supportive, with some stakeholders arguing that the harmonized target of 25% improved efficiency did not go far enough. The input received on ***heavy-duty truck efficiency improvements*** was limited but supportive. A number of stakeholders also specifically supported efforts related to ***hybrid technology***.

Detailed Input on Measures

MEASURE:	**Harmonized Fuel Efficiency Targets (25% by 2010 over current target) (measure H1BL)**
SUMMARY:	**Most breakout groups supported this measure. The automotive industry does not necessarily favour this option, while some other stakeholders believe that it does not go far enough.**

COMMENTS:

- Canadian Vehicle Manufacturers' Association (CVMA): (several sessions and written submissions)
  - CVMA recommends a hierarchy of approaches: First, voluntary initiatives. Second, broad-based economic instruments or market-based incentives. Finally, command and control measures, only after other approaches have been used.

  - Fuel consumption standards have not been very effective. These standards measure how successful the company is in selling efficient vehicles, not how efficient the technology is.
  - The voluntary harmonized target of 25% reduction as proposed by the Table would be a problem without harmonization, but if harmonized across North America would be easier. However, a target of 25% improvement is not necessarily the best way to develop more efficient vehicles.
- West Coast Environmental Law (WCEL): (written submissions)
  - WCEL is disappointed the most aggressive option considered was a 25% voluntary improvement, and that unilateral Canadian action was considered unlikely. The cost curves use exaggerated costs that are inconsistent with other sources. Ultra-efficient vehicles are already on the market, demonstrating the feasibility of more aggressive fuel efficiency standards.
  - A legal standard is more effective than a voluntary target. Harmonization with the U.S. is ideal but not essential. Manufacturers can achieve shifts to more efficient vehicles through marketing.
  - Recommendation: Canada should rapidly phase in a legally binding 6.0 litre per 100 km standard for manufacturer's combined passenger car and light duty truck fleet (a 38% improvement from current standards). Attempts should be made to encourage parallel action in the U.S.
- CAA Ontario: If we want more efficient vehicles, we need to give the automakers a target. The take-back effect is a myth (people do not drive for the sake of driving). (Toronto session)
- Better Environmentally Sound Transportation, New Brunswick Lung Association, and Resource Conservation Manitoba support mandatory improved fuel economy standards for vehicles.
- In several sessions, participants called upon industry and government to initiate dialogue with the U.S. regarding harmonization and new efficiency targets.
- Breakouts: *Vancouver, Winnipeg, Calgary, Toronto, Halifax, and Regina* groups all support Company Average Fuel Consumption (CAFC) targets, harmonized with the U.S. There are, however, concerns about the likelihood of the U.S. adopting improved standards. Another *Regina* group notes that there are vehicles available offshore with greater efficiency than domestic products. Gradual reduction of tariffs for efficient vehicles would serve as an incentive to North American manufacturers to improve efficiency. (This idea was controversial in the group.)

MEASURE: **Feebates (measure H10D)**

SUMMARY: **The automotive industry opposes this option; some other stakeholders are supportive, and some suggest a similar registration fee measure.**

COMMENTS:

- CVMA: Fees or taxes on vehicles increase vehicle costs, meaning people will keep less efficient and less safe vehicles longer. Fees or taxes also penalize various groups of users; increase costs of newer vehicles; and do not change the way people use vehicles.
- WCEL: The assumption in the Options Paper that feebates will do little to shift consumers between classes of vehicles is questionable. Other studies have found feebates to be cost effective. Recommendation: In the absence of new CAFC standards equivalent to those recommended above, Canadian governments should proceed with the adoption of a feebate system.
- STOP and Better Environmentally Sound Transportation support feebates. Resource Conservation Manitoba supports feebates, and suggests linking annual vehicle registration fees to fuel economy.
- Comment from the floor: We need to discourage fuel-inefficient automobiles and encourage fuel-efficient vehicles. Two ways of doing so are purchase taxes and registration costs. (Toronto session)
- Breakouts: Some members of the *Montreal* group felt feebates were promising, especially if combined with a similar registration fee measure. *Calgary* Economic instruments influence purchase habits. Feebates can make it worthwhile to buy an efficient vehicle, rather than an SUV.

MEASURE: Heavy Duty Truck Efficiency Improvements (measure H8A)

SUMMARY: A number of breakout groups supported this measure.

COMMENTS:

- Breakouts: *Vancouver* This is a most promising measure. *Halifax* There is an opportunity to do more, by linking to measures in the freight package (lubricants, training, etc.). *Toronto* Markets and regulations (with high fuel prices) should lead to the required technology being available. *Regina* This measure, and specifically central tire inflation systems for heavy-duty trucks, is relevant to Saskatchewan. This measure should be optional (i.e. driver- or fleet-driven).
- Agence de l'efficacité énergétique (Quebec): Another proposed measure is optimization of mechanical specifications issued to truck manufacturers for engine, transmission, tires and other options. The reduction potential is 15 percent; combined with driving measures, the potential is 30 percent. The measure could be implemented through the sales networks of heavy vehicle manufacturers, and could include publicizing and promoting fuel-efficient specifications. The measure would be inexpensive, and cost-effective for trucking companies. (Montreal session)

NEW MEASURE: Hybrid Vehicle Fleet Measure (similar to measure H2B, high-efficiency fleet purchase)

- A *Vancouver* breakout group suggested a measure to encourage the use of hybrid vehicles in fleets (initially focussed primarily on light duty vehicles).
- Azure Dynamics Inc.: The Table has been too conservative in its estimate of potential uptake of hybrid-electric vehicles. The Chairman of Ford expects these vehicles to capture 20% of the market by 2010. The background study prepared for the Table showed that diesel hybrid produces GHG reductions for $32/tonne, and low sulphur gasoline hybrid for $4/tonne (light vehicles). Hybrid technology also shows positive results for buses. Hybrid technology should be a most promising option (more so than some most promising options in the Options Paper). (Vancouver session)
- STOP supports promotion of hybrid vehicles, based on strong long-term potential. STO favours introduction of advanced technologies such as hybrid buses and supports use of grants and other assistance for alternative technologies. (Montreal session)
- Discussion in several locations noted that two Japanese manufacturers will each have one hybrid vehicle model available for sale this year in Canada.

Other Comments

Participants provided comments on other efficiency measures in the Vehicles and Fuels Package:

- The NWT Department of Transportation suggests encouraging purchase of low emission vehicles through promotion, driver education, and visual identification. This approach should be considered promising, and preferable to vehicle purchase incentives (H3A) or feebates (above). (written submission)

Participants raised the following additional points:

- CVMA: (1) The auto industry supports increased efficiency, and has achieved an 8% reduction in on-road vehicle stock average fuel consumption since 1990. However, vehicle kilometres travelled is growing at a rate that cannot be overtaken by improved

technology. (2) Daimler Chrysler, Ford, and General Motors are developing technological solutions, primarily through the Partnership of New Generation Vehicles. High volume sales of these fuel-efficient technologies are not expected to begin until 2009, with full market absorption projected in the 2030 timeframe. Technology is not the short-term solution. (3) The Canadian industry is integrated with the U.S., which means there is a need for harmonized policies across North America. (several sessions)

- Many other organizations also support increased vehicle efficiency. For instance, CPPI supports efforts to improve efficient use of fuels (several sessions), and the Toronto Hoof and Cycle Courier Coalition notes that more efficient vehicles and cleaner fuels are common sense measures. (Toronto session)
- The Climate Change Caucus of the Nova Scotia Environmental Network suggests this package be re-titled "Transportation Technologies and Fuels Package", to encompass all modes. The Options Report needs to focus on improving technology in the other modes, where there is less work in progress than in the case of road vehicles. (Halifax session)
- Enbridge Consumers Gas supports continued technology development and deployment. Some of the effort should be focused on incremental development of existing technology (e.g., improved transmissions, reduced rolling resistance). (written submission)
- Breakouts: Calgary The feasibility and efficiency of widespread use of automatic tire inflation systems should be examined. St. John's Consideration should be given to use of dashboard instruments to provide readouts of fuel consumption and efficiency, or an indication when the vehicle is falling out of tune.

FUEL-RELATED MEASURES (INCLUDING ALTERNATIVE FUELS)

The summary below begins with input on specific bundles/measures:

- Alternative Fuel Incentives (bundle)
- Specific Market Opportunities for Alternative Fuels (bundle)
- Technology Development and Demonstration (new measure).

However, in the fuels area, much of the input received was *not* focused on specific measures; instead, the input dealt with stakeholder views concerning particular fuels and related technologies. Accordingly, this section also includes additional summaries of presentations concerning particular fuels or technologies:

- Natural gas vehicles
- High-Pressure Direct Injection (HPDI) of Natural Gas
- Ethanol
- Methanol fuel cells
- Other fuels/technologies.

Overview of Stakeholder Input

The information provided by stakeholders emphasizes the ***potentially significant contribution of alternative fuel technology*** to GHG reduction. Some stakeholders stated that the Options Paper

underestimates the potential, while the petroleum industry believes the potential is overstated. Most input also stresses the importance of ***incentives*** as a means to encourage the development of certain alternative fuels, and many stakeholders favour support for alternative fuel fleets and technology demonstrations. Input was also received concerning the benefits of improvements in conventional fuels.

Detailed Input on Measures

BUNDLE:	**Alternative Fuel Incentives.** This bundle includes alternative fuel infrastructure incentives for propane and natural gas (measure H7B and H7C), ethanol capacity incentives (H5B), and other suggestions relating to alternative fuel incentives.
SUMMARY:	**Most input received stressed the importance of incentives as a means to encourage the development of alternative transportation fuels, with suggested incentives for fuels, infrastructure, and vehicles.**

COMMENTS:

- Natural gas industry representatives (as listed in technology box below) provided the following input concerning incentives: (various sessions and written submissions)
  - The industry asks that government commit to maintaining the current taxation regime for natural gas as a transportation fuel (i.e. maintain the relative tax structure/advantages among fuels). Users considering investing in NGVs need confidence that the relative prices will be sustained.
  - Vehicle purchase incentives are needed to encourage greater production and reduce vehicle prices.
  - Incentives may also be needed to expand infrastructure in key development areas (such as truck corridors), although this is less of a requirement given the advantages of on-site refuelling capability, wide distribution of natural gas, and private sector response to increased demand. The industry is encouraged by inclusion of measure H7C in the Options Paper.
- Canadian Renewable Fuels Association (CRFA): Maintenance of existing tax exemptions for ethanol blends is very important for the industry. (written submissions)
- Comment from the floor (Toronto session): The current fuel tax differential for alternative fuels should be maintained but no additional fuel incentives are needed. What is needed is for government to champion and promote alternative fuels. There may also be need for small vehicle incentives.
- Breakout groups general comments: *Winnipeg* The Table's promising measures (including alternative fuel infrastructure and ethanol capacity incentives) are suitable for Manitoba. Governments and suppliers/manufacturers should work together on creation of incentives for alternative fuel vehicles and infrastructure (e.g., CCA, taxes). *Vancouver* A kick-start is needed to help natural gas become a significant contributor, such as assistance to address vehicle cost and increase consumer awareness. *Montreal* The group discussed but did not reach consensus on a series of positive and negative incentives based on the polluter-pays principle.
- Breakout groups concerning alternative fuel infrastructure incentives (H7B and H7C): *Toronto* Freight corridors for alternative fuels are needed. Stations can be built economically now if the market exits, but the market is lacking. *Regina* The corridor concept has value in Saskatchewan (e.g., the Regina-Saskatoon corridor). A strengthened fuel infrastructure removes barriers associated with vehicle ranges. *Calgary* Alternative fuels are attractive, but there was disagreement in the group regarding relative levels. Promotion would involve alternative fuel corridors (particularly Calgary-Edmonton) plus fleet purchase incentives.
- Breakout groups concerning ethanol capacity incentives (H5B): *Vancouver* Ethanol blends (low level) are a most promising measure. The tax implications of the ethanol recommendations are high,

and may be underrepresented. *Montreal* For ethanol, it was recommended that the focus be shifted away from corn toward wood or other alternatives (no specific reference to incentives). *Regina* The barriers to having E10 in all gasoline in Canada can be overcome. The relative price of ethanol will come down with volume production and increased gasoline prices. This use of E10 would need to be mandated to create the significant volumes required. *Halifax* Wood has the most potential in the Atlantic Provinces as an ethanol feedstock. Technology development is required to get to a marketable fuel.

BUNDLE: **Specific Market Opportunities for Alternative Fuels**. This bundle includes AFV fleet purchase (measure H2A), heavy-duty truck AFV purchase (H8B), transit bus design and alternative fuels (H9), and other suggestions relating to AFV opportunities.

SUMMARY: **Most input supported efforts to increase alternative fuel use in fleets and in specific markets such as heavy duty vehicles and transit buses.**

COMMENTS:

- The natural gas industry is encouraged by measures in the Options Paper that address specific opportunities for NGV, including fleet purchase, heavy duty truck, and bus measures. (several sessions)
- Resource Conservation Manitoba supports fleet procurement policies that promote use of fuel-efficient vehicles using renewable energy sources, and supports expansion of the Alternative Fuels Market Development Initiative. (written submissions)
- Breakout group general comments: *Winnipeg* The Table's promising measures (including the measures in this bundle) are suitable for Manitoba. *Halifax* Opportunities will be available in Nova Scotia and New Brunswick to link with Sable Island natural gas.
- Breakout groups concerning AFV fleet purchase (H2A): *Halifax* Incentives are required for fleet managers. *Montreal* The group supports use of new technologies in niche markets, including fleet vehicle incentives and government vehicle procurement. *Calgary* See measure H7B/H7C above.
- Breakout groups concerning heavy duty truck AFV purchase (H8B): *Toronto* Truck demand could be large enough to reduce technology costs and thereby make the technology feasible for transit buses as well. *Halifax* Creation of the necessary infrastructure is key, and the cost recovery time needs to be short enough for the fleet managers to want to make the investment.
- Breakout groups concerning transit bus design and alternative fuels (measure H9): *Halifax* The group noted that the need to recapitalize transit fleets provides a significant opportunity to reduce emissions by replacing older buses with newer alternative fuel vehicles. *Regina* Alternative fuels and transit need to be linked. Six transit operations in Canada already have buses operating with alternative fuels (a total of 250-300 vehicles). *Montreal* A group supports alternative fuels in niche markets, including natural gas powered buses and hybrids. *Toronto* Alternate funding mechanisms are needed (e.g., private funding mechanism to stimulate updating and innovation in transit fleets).

NEW MEASURE: **Technology Development and Demonstration**

- Some breakout groups made suggestions relating to technology development and demonstration programs for the newest technologies (for both efficient technologies and alternative fuels). *Winnipeg*: Governments and suppliers/manufacturers should work together on R&D, demonstrations, and vehicle testing. *Montreal*: The group recommended continued financing of R&D and marketing. *Vancouver* The group identified incentives for technology demonstration as a missing measure.

TECHNOLOGY: Natural Gas Vehicles

- Separate presentations concerning NGVs by the Canadian Natural Gas Vehicle Alliance and FuelMaker Corporation, ATCO Gas, SaskEnergy, BCG 4Pro Systems, Enbridge Consumers Gas, Union Gas, and Gaz Métropolitain (various sessions)

COMMENTS:

- Natural gas vehicles are proven, available and economic, with over a million vehicles in operation around the world. NGVs can provide a 32% reduction in GHG emissions and very significant reductions in VOCs, CO, and NOx (much cleaner than the Ultra Low Emission Vehicle standard).
- OEM technology is reliable, and commercially available today. There is a selection of light duty and heavy-duty vehicles available now for GHG reduction. The three North American vehicle manufacturers have their NGV "centres of excellence" in Canada. There are also promising options in heavy-duty trucks, buses, and ferries.
- Dedicated natural gas vehicles have a range of 300 kms or more (and bi-fuel vehicles add to the vehicle's existing gasoline range). Fuelling infrastructure is proven and economic, and a distribution network is in place. Fuelling technologies are available from Canadian companies.
- For cars, the Options Paper assumes production of 20,000 vehicles, yielding a cost of GHG reduction of $40 per tonne. However, for 50,000 vehicles, the vehicle cost is significantly reduced, yielding a net benefit of $5 per tonne. The study is based on a fuel-efficient small sedan. For more common applications such as commercial trucks or vans, the cost would be a benefit of $10 per tonne.
- NGV should be a "most promising" option for GHG reduction, even without considering other factors such as improved safety, NOx and particulate reductions, and abundant natural gas reserves.

TECHNOLOGY: High-Pressure Direct Injection Of Natural Gas

- Presentation by Westport Innovations Inc.

COMMENTS:

- Westport is developing technology for high-pressure direct injection (HPDI) of natural gas for diesel engines in heavy-duty applications. This technology reduces emissions of NOx, particulate matter, and CO_2 relative to diesel fuel, while maintaining the torque and efficiency of diesel.
- HPDI was identified, in a background research paper prepared for the Transportation Table, as the most cost effective method to reduce GHG emissions from heavy-duty trucks. The HDPI technology can also be used in stationary applications, and work is beginning on use in light utility vehicles.
- Cost-effectiveness can be improved further by looking at new liquefaction technology for natural gas, which reduce energy input to liquefaction. This can reduce the cost of GHG reduction to less than $20 per tonne of CO_2 equivalent, and perhaps as low - $20 per tonne in the future.
- This is a Canadian technology that can effectively use an abundant Canadian resource.

TECHNOLOGY: Ethanol

- Submission by Canadian Renewable Fuels Association (CRFA)

COMMENTS:

- Ethanol blends offer an attractive cost effective option for GHG reduction. If the industry expanded to produce 1 billion litres of ethanol per year by 2010, CO_2 equivalent reductions would be 1.47 million tonnes per year. This refers to 10% ethanol blends derived from corn; production from lignocellulose offers additional reductions.

- CRFA is disappointed that the potential for flexible fuel vehicles operating on E85 was not thoroughly evaluated. E85 has the potential to reduce GHG emissions from transportation by as much as 57% once ethanol is produced from lignocellulose.
- The association is also disappointed that consideration was not given to technologies such as fuel cells using ethanol as the primary feedstock, and ethanol's use as an aviation fuel. Also, the potential for biodiesel to curb GHG emissions should be re-evaluated once it is in commercial production.

TECHNOLOGY: Methanol Fuel Cells

- Presented by Methanex Corporation

COMMENTS:

- Methanol fuel cells have very low emissions of urban air pollutants, and provide 40-50% reduction of greenhouse gas emissions. In the future, fuel cells will replace the internal combustion engine. We need to support the technology in order to accelerate change and achieve the benefits as quickly as possible.
- The Table's analysis used conservative assumptions, resulting in low estimates for cost-effectiveness and market penetration. Incremental vehicle cost assumptions are higher than industry estimates of $3000 per vehicle. Incremental retail costs are also higher than industry expectations, and the methodology penalizes methanol by excluding retail and fuel taxes from the calculation.
- Conclusion: Cost effectiveness of methanol fuel cell vehicles is projected to be in range of $35-50 per tonne of CO_2 reduction after the above-noted adjustments. Methanol fuel cell vehicles should be included in the "most promising" or "promising" categories.

TECHNOLOGY: Other Fuels/Technologies

- Presentations and comments from various groups

COMMENTS:

- Fuel cell technology (general): Strathcona County Engineering and Environmental Planning supports promotion of fuel cell technology, such as the Ballard fuel cell. (written submission)
- Electricity: A *Montreal* breakout group believes that electric vehicles deserve a clearer place in the Options Paper, particularly in the Quebec context (hydroelectric generation). The concept should be expanded to include electric bicycles and other types of vehicles.
- Conventional fuels: CVMA states that we need to treat vehicles and fuels as a system. Improved fuel quality is needed as an enabler for more fuel-efficient advanced vehicle technology. Cleaner fuels provide immediate benefit across the entire fleet of existing vehicles (several sessions). A *Montreal* breakout group notes that low-sulphur fuels are a prerequisite for advanced technologies and will require concerted action by stakeholders (government, auto manufacturers, fuel companies, etc.) to establish realistic objectives. Agence canadienne de commercialisation et de distribution (Québec) advises that a 100% organic fuel additive has been developed in collaboration with the Québec Industrial Research Centre (CRIQ). The additive delivers more efficient combustion, with energy gains in the order of 8%. (written submission)
- Diesel: CPPI notes that diesel fuel is 25-30% more efficient in light duty vehicles, meaning a similar reduction in GHG emissions. New motors using reformulated diesel will have the same emissions of criteria pollutants as gasoline engines. This is an opportunity that is available now. (Halifax session) A *Halifax* breakout group also noted that there will be opportunities for clean diesel (not specifically defined). A *Vancouver* breakout group suggests mandated additive content for diesel fuel (specifically, use of detergents in diesel fuel to improve emissions).

- Gasoline: Resource Conservation Manitoba supports mandatory renewable energy content in gasoline. (written submission)
- Other: Participants raised questions concerning other technologies, such as genetically modified biomass fuels for aviation, and compressed air vehicle technology. (Calgary and Regina sessions)

Other Comments

Participants raised the following additional points:

- CPPI: The potential for alternative fuels and new technologies is overstated. The assumptions regarding breakthrough technologies, reduction in vehicle cost, and consumer reaction are not consistent with experience in the last 25 years. (several sessions)
- CVMA: Alternative fuel vehicles are available from the manufacturers, but cost challenges remain (such as tanks on CNG vehicles). Without volume production, it will be difficult to bring costs down. (several sessions)
- Enbridge Consumers Gas: Measures need to be harmonized across North America (written submission). CPPI also believes harmonization needs emphasis. Some 35-40% of reductions require a harmonized approach with the U.S. (several sessions).
- The Gaia Group recommends more emphasis on alternative fuels, and support for the farming community through increased use of biofuels. (Regina session)
- Comment from the floor: One view is that natural gas may produce greater GHG reduction in power generation by displacing coal, and that more study is needed on the impact of ATF use on availability of fuels for power generation. (Toronto session)
- Breakout Groups: *Vancouver* To make the measures happen, policy and financial levers should be applied concurrently and consistently, including technology demonstration, education, and pricing (taxes and incentives). We need to be able to identify the bottom line benefits to the buyer, in addition to the environmental benefits. *Winnipeg* Important issues include the following: First, which aspects will be voluntary and which will be legislated? Second, what amount of capital will the various players commit? Third, what are the timeframes for the application of these measures? *Toronto* Some group members believe that creating demand for ATF vehicles and fuels involves awareness, tax measures, and regulation (as in California).

Participants also identified many business opportunities associated with new technologies. In addition to input concerning specific technologies as outlined above, the following general comments were made:

- Saskatchewan Research Council: In Canada, there are about 25 companies that do continuous product development in the alternative fuels area. These companies sell products internationally, and are very innovative. There are significant domestic and international business opportunities based on climate change. (Regina session)
- Charonic Canada Ltd.: The advanced transportation fuels market is characterized by a large number of small and innovative companies. Canada has skilled people and established companies, and the technology is readily available. The key issues for success

are government leadership; a focus on market opportunities that offer other benefits in addition to GHG reductions; an emissions trading protocol; and access to joint implementation projects. (Toronto session)

OFF-ROAD

Very little stakeholder input was received on the Table's off road package. The following points summarize the suggestions and comments received:

- NWT Department of Transportation: The department supports research regarding off-road vehicles. The NWT has a number of new resource development projects expected or planned. Any measures that reduce emissions in mining, forestry, and oil and gas would be more effective and cost-efficient if implemented at the beginning of a project or development. (Calgary session)

- NWT Department of Transportation: All terrain vehicles and snow machines are used extensively in communities as the primary mode of transport. For these vehicles, the Department of Transportation supports public awareness activities, fuel efficiency regulations, and MOUs. (Calgary session)

- Natural History Society of Newfoundland and Labrador: Government policy promotes growth of the off road sector, for example by subsidizing the construction and maintenance of snowmobile trails. Eliminating such subsidies, and increasing taxes on recreational vehicles such as ATVs, snowmobiles, and jet boats, could discourage growth. Governments should instead promote non-motorized recreation. (written submission)

- Natural History Society of Newfoundland and Labrador: The recreational/gardening component of the off-road sector has not received the attention it deserves. Much research is required to examine the contribution of this sector, and how emissions could be reduced. (written submissions)

- St. John's breakout session: Off road vehicles themselves promote speed – bigger and better machines mean more speed. We need to look at producing machines that are GHG optimized, and making this desirable to the buyer. This implies restriction on engine size through regulation or through stakeholder consultation.

- Regina breakout session: Farmers and heavy equipment operators would benefit from education and training opportunities addressing the maintenance of off-road equipment for maximum efficiency (though trade schools and extension services).

- Canadian Renewable Fuels Association: Ethanol offers potential for use in off road vehicles and equipment, and has been used to reduce emissions in environmentally sensitive locations in the U.S. (written submission)

- Canadian Natural Gas Vehicle Alliance: Off road natural gas vehicles are factory available, including for instance lifts (e.g., Caterpillar, Sellick, Clark) and ice resurfacers (e.g., Zamboni and Olympia). Conversions to natural gas are readily available. (Toronto session)

- Montreal breakout session: The group supports measures aimed at promoting new technologies in niche markets, including off-road vehicles (e.g., electric bicycles, boats).

3.3 ECONOMIC INSTRUMENTS

During the consultation sessions, substantial input was received concerning taxes, prices, and related measures. This section summarizes the key points raised, subdivided into two sub-topics: fuel taxes, and level playing field. For each sub-topic, the main themes in the stakeholder input are noted, together with *illustrative* examples of specific stakeholder views. (written submissions except as noted)

Overview of Stakeholder Input

Stakeholder opinion on the topic of increased fuel taxes was mixed. In contrast, a high level of support was expressed, across the country, for the concept that at least a portion of fuel taxes be dedicated to transportation infrastructure and systems (particularly for low GHG modes, and for other improvements that reduce GHG emissions).

Many stakeholders considered the issue of level playing field to be important. There was, however, sharply divided opinion as to which modes currently benefit from favoured tax treatment. Stakeholders recognize the need for a full-cost accounting examining taxation, fees, charges, subsidies and externalities, to assist future policy decisions.

Fuel Taxes

A wide diversity of opinion has been expressed on the topic of fuel taxes. Many stakeholders do not support fuel tax increases. For instance:

- CPPI strongly agrees that a $0.86 per litre fuel tax should not be supported and would not be acceptable to the public. There is no North American experience to indicate that smaller increases will have a proportionate impact on consumption. (various sessions)
- The Canadian Automobile Association opposes increased fuel taxes.
- Enbridge Consumers Gas believes the potential negative impacts of fuel taxes may overshadow any benefits.
- Saskatchewan Trucking Association: Fuel taxes are not a viable approach. They would place Canadian truckers at a disadvantage in North America.
- The Atlantic Provinces Transportation Commission: The current protests regarding rising fuel prices demonstrate the low public tolerance for fuel price increases, and increased energy costs would have a negative impact on Canada's economy.

Other stakeholders have different views concerning the value and public acceptability of fuel taxes. The following submissions, for instance, support consideration of fuel tax increases:

- Halifax Regional Municipality: Halifax Council has approved increases in water bills, to raise $200 million to address pollution of Halifax harbour. The public will accept higher costs (and inconvenience), if they see real environmental benefit. (Halifax session)
- Urban Transportation Council of the Transportation Association of Canada: Increasing fuel taxes is the most straightforward method of instituting a pricing mechanism that is compatible with climate change objectives.
- West Coast Environmental Law: Transportation measures should be combined with either increased fuel taxation or economy wide market instruments, or both, to ensure synergies.
- Resource Conservation Manitoba supports phased-in and continuous increases in gasoline and diesel excise taxes.
- STOP supports additional taxation on fuels, phased in over time. (Montreal session)

Most stakeholders who would support a fuel tax increase emphasize that all or part of the revenue generated should be dedicated to transportation improvements. The tax measure would thus contribute to GHG reduction both as a price signal, and as a source of revenue for low GHG infrastructure investments. Some stakeholders also see this approach as an essential element of public acceptability. Other stakeholders, though opposed to increased fuel taxes, support dedication of all or part of existing taxes to transportation infrastructure and systems for reduced GHG emissions. For example:

- Halifax Regional Municipality: A dedicated tax, such as Nova Scotia's $0.02 per litre road tax that provides highway system funding, could produce $6 million/year for public transit. This is the preferred approach. (Halifax session)
- BC Transit: Transit systems will need assistance to expand infrastructure and increase service to meet increasing demand. A national fuel tax for these purposes makes sense, but revenue must be dedicated to increasing transportation options and systems. (Vancouver session)
- Better Environmentally Sound Transportation: Fuel taxes or parking pricing measures will have more acceptance if revenues are invested in transportation. (Vancouver session)
- Resource Conservation Manitoba: A National Transit Improvement Fund should be created, financed from fuel tax increases.
- Several breakout groups also recommended that a dedicated portion of fuel taxes be allocated to transit and transportation enhancements. One group noted that public acceptability of pricing and tax measures would be increased by linking these changes to identifiable reductions in other taxes.

Numerous stakeholders commented on expected public reaction to tax increases, and noted the current response to increasing gas prices as an indicator. The BC Automobile Association believes that the price elasticity for gasoline is such that price won't be sufficient to significantly reduce automobile use by itself, unless other factors are improved as well (Vancouver session). The NWT Department of Transportation suggests that, in remote regions, people have adjusted to

higher fuel costs. Increased fuel taxes and other pricing mechanisms will not likely have much impact on emissions, because high operating costs are accepted. (written submissions)

Other stakeholders commented on the role of fuel taxes in deliberately encouraging certain fuels or modes. For instance:

- Several natural gas companies noted the importance of maintaining the price differential between natural gas and conventional fuels for vehicle use. (various sessions)
- Nova Scotia does not tax the fuel used by the railroads. Differential taxation of this sort can achieve some of the impacts of a dedicated tax. (Halifax session)

Finally, stakeholders offered several additional comments concerning fuel taxes and related measures, including the following:

- Ontario Good Roads Association: It is unfair to transfer the burden to rural municipalities through urban measures like an urban gas tax, income tax relief for employer-paid transit, or transit subsidies. Municipalities should receive 10 cents of the 30 cents per litre tax collected by the federal and provincial governments, distributed on the basis of vehicle kilometres travelled. (Toronto session)
- SNC-Lavalin: There could be a surtax on the consumption of energy-hungry vehicles. The announcement of a gradual tax hike would have more effect than a sudden change. (Montreal session)
- Mouvement Au Courant: Another idea would be to extend tradable emission permits to individuals. Each adult would be credited with an annual allowance of greenhouse gas emissions. Those who don't need their credits could sell them to vehicle operators, who would then pay for fuel with cash and greenhouse gas credits. (Montreal session)

Level Playing Field

Many stakeholders were concerned about the degree to which the different transportation modes operate on a level playing field with respect to tax treatment, subsidies, and user pay policies. Transport 2000, for instance, argues that:

- Depreciation rates for equipment are not equal between modes – for instance, rail has a lower rate than air.
- Other transportation modes pay user costs (e.g. for roads) as operating costs. Only the railway companies have to invest in track costs and depreciate at 7% per year.

On the other hand, the Atlantic Provinces Trucking Association states that:

- The trucking industry has concerns about unequal tax treatment between the rail and trucking industries. Trucks are over-taxed. The capital cost allowance is uncompetitive with competitors north and south of the border in different modes. (Halifax session)

The general conclusion reached by a number of stakeholders is that we need a proper analysis of full costs associated with each mode, including examination of the taxation regime, fees, charges, subsidies, and externalities. This analysis would provide the basis for "levelling the playing field".

3.4 OTHER ISSUES

In this section, selected additional input from stakeholders is briefly summarized. The input addresses three general topics: comprehensive transportation planning, data and analysis issues, and classification of measures.

Comprehensive Transportation Planning

A number of organizations, and several breakout groups, spoke of the need for comprehensive transportation planning. For instance:

- West Coast Environmental Law recommends that the federal government implement minimum requirements for integrated full cost transportation planning, as a condition of any federal funding for transportation infrastructure (written submission). Better Environmentally Sound Transportation also suggests that a least cost transportation planning program make federal transportation funding dependent on this approach, and further suggests that the National Transportation Investment Strategy (NTIS) would have to undergo least cost planning before any approval. (Vancouver session)

- A *Vancouver* breakout group called for an integrated transportation policy with a sustainable development orientation. Groups in *Winnipeg, Toronto, and Montreal* suggested that Canada create an integrated policy framework and infrastructure fund linked to GHG objectives (similar to the U.S. TEA 21).

On a related point, Dr. Mark Bunting believes that changes will only be achieved through institutions better attuned to consumer interests, which is more likely in a market environment where government supports or guides private action. He further believes that the Options Paper's preference for direct government roles will be no more successful than in the past. (written submission)

Data and Analysis Issues

Stakeholders also raised various data and analysis issues. The following list provides a summary of the major issues raised:

- Many stakeholders agree with the Table concerning the uncertainties and gaps associated with some of the data. For instance, a Vancouver breakout group notes that the reliability of the data is uncertain (especially regarding heavy duty vehicles). A Toronto breakout group expressed concerns about the cost calculations for the various alternative fuels,

particularly natural gas. CVMA agrees that additional analysis is required, to avoid compounding errors in future modelling results. (various sessions)

- Stakeholders raised specific questions concerning expected penetration rates or costs for various technologies, and/or the market impact of specific measures. These comments are documented as appropriate in other sections of the report.

- Stakeholders also note that additional data will be important in further development of the measures. For instance, the Halifax breakout suggests a need for data concerning passenger travel, including origin/destination studies, and behaviour studies.

- Apart from specific data issues, some stakeholders raise broader issues. For instance:

    - Based on experience with transportation demand measures, CPPI believes the report is overly optimistic in its assessment of reductions and costs. Inconsistencies in estimates produce low costs and very high benefits in general, and in particular for the transit pass tax exemption and HOV lanes. CPPI also believes that the fuel tax analysis, which shows a $10 billion annual cost to achieve the Kyoto targets through a fuel tax, indicates the value the consumer places on current transportation choices, and is at odds with the estimates for other measures ($250 million net benefit for 75% of needed reductions). This large discrepancy challenges the validity of the measures results. CPPI also believes the ancillary benefits regarding common air contaminants are incorrect. (various sessions and written)
    - Conversely, stakeholders is several locations argued that apparent costs of GHG reduction presented in the Options Paper are overestimated, since they do not yet reflect air quality, health, congestion, and other co-benefits. (various sessions) The Victoria Transport Policy Institute also argues that the Table report used an engineering analysis of load shifting, which overestimates costs of transportation demand management (costing of travel time overstates the cost of TDM for measures involving consumer choice). Strathcona County Engineering and Environmental Planning makes as similar point, noting that inclusion of the dollar cost of time in an economic analysis means that walking, biking, and transit are generally more expensive modes than the car. (Vancouver session and written submission)

- The Centre for Sustainable Transportation believes the Options Paper analysis is based on incorrect (low) projections of energy use. The average increase in transportation energy use during the 1990s has been 2.2%. Using the growth rate, Canada's transportation GHGs will have to be reduced by 78 Mt instead of 54 MT. (Toronto session)

Classification of Measures

Some stakeholders believe the basis for categorization of measures should be adjusted. They consider the current approach to be based on degree of difficulty, which may not be the best way to determine priorities. For example:

- The premise that there is a relationship between easier and cheaper at one end of the continuum, and difficult and more expensive at the other, is incorrect. Measures that are politically difficult can be economically cheap; measures that are politically easy can be economically expensive. The focus should be on long-term sustainability. (Anthony Perl, University of Calgary, Calgary session)

- The categories relate to how easy it will be to implement the measure. The terminology needs to be clarified; some of the most promising measures don't contribute much to GHG reduction (Calgary breakout). What was done was not a technical cost-effectiveness analysis, but rather a consensus-based multi-criteria analysis (Vancouver breakout).

- The Table's approach was to classify measures by degree of difficulty. This could result in some sectors being exempt from contributing because the measures they might take are costly or politically challenging. This would be unfair and could compromise public support. (Société de l'assurance automobile du Québec, Montreal session)

- The Table process favoured a fragmented set of measures that reflect a wish to minimize the risk of committing to unknown costs and benefits in the future, while promoting equality of effort between provinces and sub-sectors in transportation. This differs from seeking measures that would attain the commitments while maximizing net benefits and overall efficiencies both within the transportation sector and across all sectors of the economy. An alternative would be an "experimental testbed" approach. (Gillen & Morrison, Wilfred Laurier University, written submissions)

3.5 SYNTHESIS

The following brief summary re-capitulates key points in the Sections 3.1 to 3.3 regarding proposed GHG reduction measures in the transportation sector:

- ***Education and awareness:*** Stakeholders in all locations identified the critical need for early and sustained public education and awareness activities relating to transportation and climate change. Awareness encourages behavioural change (although this alone won't change behaviour), and may contribute to support for government policy measures.

- ***Land use:*** There was broad concern among participants concerning the exclusion of land use planning from the Table's mandate. In all sessions, recommendations were made concerning integration of land use and transportation. There is a widely perceived need to fully integrate land use issues into the proposed packages of transportation measures (particularly the passenger package).

- ***Passenger package:*** For passenger transportation, the input from stakeholders supports efforts to reduce travel demand, shift travel away from GHG intensive modes to less intensive alternatives, and reduce emissions within modes. There is a strong sense of urgency to move forward with high priority measures. Support was strongest for substantial, integrated measures dealing with urban transit; travel demand management

efforts; strengthening of interurban rail; and specific initiatives such as tax-exempt transit passes and bicycle/pedestrian infrastructure.

- ***Road infrastructure package:*** For road infrastructure, there is substantial support for enforced and reduced speed limits, which together represent about two-thirds of the GHG reduction potential among the analysed measures in the package. The input also supports most of the other most promising, promising, and less promising measures proposed by the Table, with mixed support for HOV lanes and reservations from some stakeholders regarding some intelligent transportation system (ITS) applications.

- ***Freight package:*** For the freight package, a concern raised by many participants is the apparent absence of measures for modal shift. There is broad support for measures to encourage increased intermodal co-operation and shipping. Some stakeholders also recommend more aggressive action to cause significant modal shift. Otherwise, participants generally supported the Table's most promising and promising measures, with the exception of the long truck measures, which attracted some strong opposition, but were also supported by other stakeholders.

- ***Vehicles and fuels package:*** For the vehicles and fuels package, input was received on both efficiency and fuel-related measures. Regarding efficiency, the automotive industry does not necessarily endorse fuel efficiency targets, and opposes feebates, considering these to be ineffective, high-cost measures. All other input received on these measures was supportive, with some stakeholders arguing that the harmonized target of 25% improved efficiency does not go far enough. Regarding fuel-related measures, information provided by stakeholders emphasizes the potentially significant contribution of each alternative fuel technology to GHG reduction. Some stakeholders stated that the Options Paper underestimates the potential, while the petroleum industry believes the potential is overstated. Most input also stresses the importance of incentives as a means to encourage the development of certain alternative fuels. Input was also received concerning the benefits of improvements in conventional fuels.

- ***Off-road package:*** The Table received very little input on the off-road sector. Stakeholders recognized that opportunities exist regarding both the vehicles/equipment and their operation, but provided only limited specific guidance.

- ***Fuel taxes:*** Stakeholder opinion on the topic of increased fuel taxes was mixed. However, a high level of support was expressed, across the country, for dedicating at least a portion of fuel tax revenues to transportation infrastructure and systems (particularly for low GHG modes, and for other improvements that reduce GHG emissions).

- ***Comprehensive policy and planning:*** Several stakeholders have called for an integrated approach to transportation policy and planning, with a least cost and sustainable development orientation.

- ***Data and analysis:*** Data gaps are of concern to many participants. There was general agreement with the Table's view that better data and more analysis are required over the coming months, to address this important limitation.

- ***Other comments:*** Many stakeholders pointed out that the measures required to achieve significant GHG reduction will require very significant and sustained investment in transportation infrastructure and improved services. But stakeholders also noted that this effort serves many goals in addition to GHG reduction, including reduced air pollution, reduced health impacts, less congestion, and a more sustainable transportation system.

4. REGIONAL PERSPECTIVES

In all eight consultation sessions, participants stressed the importance of recognizing the ***unique local and regional situations and considerations*** in the design and implementation of GHG reduction initiatives in the transportation sector. This refers to differences both between regions and provinces, and also within regions and provinces. In many locations, specific mention was made of the importance of considering the ***needs of rural (including agricultural) and northern transportation users***.

Notwithstanding the unique situations and circumstances that exist across the country, participants also noted that ***opportunities exist in all areas***, and that there are many ***benefits gained through transfer of experience between jurisdictions***. For instance, it was noted that measures suitable for larger cities can also be relevant in other areas (smaller cities and rural communities), and many participants noted the importance of demonstrations of a measure in one area as a basis for wider application.

In addition, for each location participants raised other local issues or observations. ***Comments relating to particular measures are addressed elsewhere in this report.*** The summary below highlights a number of more general points that emerged at each location. The source of the comment is noted where this is helpful to understand the comment. Unattributed comments were raised by a presenter or in discussion, and do not necessarily represent consensus of the group.

Note: A full summary of the discussions in each location is provided in Appendix A. In some locations, participants mentioned specific local infrastructure requirements. These included, for instance, suggestions in Vancouver for new structures over the Fraser River and another crossing under the harbour, and in Calgary for ring roads to allow vehicles to bypass the city. Such suggestions are not mentioned below, but can be found in the Appendix summaries.

Session	Comments
Vancouver	• The City of Vancouver considers the Options Paper to be a major step forward. The ideas for urban transportation are broadly consistent with the transportation policies in the City of Vancouver and the Greater Vancouver Regional District. • British Columbia has a number of interesting technology-based options that could make a contribution with the right "push". • Tourist travel needs more consideration in the analysis, since BC has a substantial tourist industry. This might include consideration of resort community transport demand management initiatives. • Current HOV lane extension in the Vancouver area is limited. Current infrastructure is not adequate, resulting in severe congestion and excess emissions.
Calgary (includes comments relating to the NWT)	• In Alberta, transportation emissions represent a smaller share of total GHG emissions than in other provinces. Larger GHG reductions may therefore be available in other sectors. • In Calgary, research shows that consumers are much more sensitive to transit fares than to the price of fuel and parking. Alberta's recent decision to invest a portion of existing provincial fuel tax in transit is a desirable approach, which should also be considered by the federal government.

	• There may be intermodal opportunities in Alberta, such as intermodal freight in the Canmore-Revelstoke corridor, and expanded park-and-ride for urban transit. • Alberta produces virtually all alternative fuels. Support for alternative fuel infrastructure in the Edmonton-Calgary corridor, and in tourist destinations like Banff and Jasper, could link to a fleet incentive program for high fuel users, and to an education/awareness program. • The NWT produces less than 0.2% of national GHG emissions. However, the growth rate exceeds the national average, and transportation is the largest sector. • The NWT Department of Transportation asks that the GHG strategies take into account the special needs of the region, and ensure that no single region is inordinately affected. NWT hopes that the GHG initiative does not hamper development, and specifically new roads, as increased access is essential for resource development in the region.
Regina	• Saskatchewan has opportunities related to GHG reduction. For instance, alternative fuels such as natural gas are available, as are vehicles, fuelling infrastructure, and expertise. Biofuels also have potential. Research capacity exists. Leading edge technologies are being exported. SaskEnergy and other businesses would be positively impacted by natural gas and renewable transportation fuel strategies. • The alternative fuels corridor concept has value in Saskatchewan (for instance, the Regina-Saskatoon corridor). • The Canada Transportation Act and, the resulting rail line abandonment, run contrary to policies to reduce GHG emissions. Farmers should not be penalized for increasing GHG emissions as a result of longer shipping distances by road. • Increased primary resource processing in Saskatchewan would reduce the expensive shipping of waste material (and associated emissions). Incentives could be established to encourage more processing in Saskatchewan – for instance, incentives such as emission trading.
Winnipeg	• Manitoba is a transportation gateway, and transportation is a very important part of Manitoba's economy. The province contributes proportionately more to Canada's transportation GDP (6.5%) than its population (3.8%). GHG reduction presents Manitoba with both challenges and opportunities. • The Table's most promising and promising measures are suitable for Manitoba. This is due to the well-established transportation industry and an established or emerging alternative fuels industry. Manitoba has a unique opportunity to make progress: there is little awareness/acceptance of the problem yet there is much to gain from the economic opportunities. • The challenge for transit in Winnipeg is lack of congestion. Driving is too attractive. Measures that improve the relative attractiveness of transit should be supported.
Toronto	• The Regional Municipality of Ottawa-Carleton has adopted a resolution endorsing the general direction of the Transportation Climate Change Table. • The TTC and Go Transit have shown that investment in transit will result in greater utilization. However, transit in Ontario has experienced shrinking funding, increased fares, and decreased service. Capital funding is below what is required, resulting in aging fleets and lack of track and vehicle capacity. • Transport 2000 has studied the financing of Ontario's road system, and concluded that $2 billion of the annual provincial debt could be attributed to the imbalance between the cost of the road system and the revenues collected from users.

	• There are modal shift opportunities in high volume corridors such as Quebec City – Windsor, including shifts to passenger rail and intermodal freight. • Several Ontario businesses see significant business opportunities through such GHG reduction measures as ITS and alternative fuels. Conversely, some Ontario industries (particularly the auto industry) are concerned that certain measures could cause negative economic impacts, unless harmonized with the U.S.
Montreal	• In Canada, transportation accounts for about 25 percent of greenhouse gas emissions. In Quebec, however, the proportion is over 40 percent. • The City of Montreal agrees with the proposed measures. • SNC-Lavalin recommends that private sector involvement should be maximized in order to facilitate national implementation and benefit from advantages at the international level (expertise, revenue and eventually greenhouse gas credits). The reduction of greenhouse gas emissions can be an opportunity for businesses, providing they take a proactive and innovative approach. • Conseil régional de développement de l'île de Montréal notes that the diversity of the various regions requires flexibility in the choice of measures. The national program must set objectives and leave the choice of means up to local and regional governments. It is essential that the federal government participate in the implementation of measures. The measures must not threaten the competitiveness of the region, and that they must therefore be in harmony with those of the USA.
Halifax (includes comments relating to other Maritime provinces)	• GHG reduction will create new industries, and Nova Scotia has an opportunity to take advantage of these opportunities • Halifax Regional Municipality will be considering a possible commuter rail feasibility study in the near future. Costs that would be displaced (such as the need for road widening and parking downtown) need to be valued in the equation before determining the net cost or benefit. • Opportunities will be available in Nova Scotia and New Brunswick to link with Sable Island natural gas (for natural gas vehicles). • A number of issues specific to the Maritimes include absence of rail lines; importance and competitiveness of tracking; and large proportion of rural population.
St. John's	• The potential implications of Partnership for New Generation Vehicles (PNGV) for a remote area need to be considered. PNGV is looking at several technologies. Hybrid technologies can operate with conventional liquid fuels, although the fuel may need to be cleaner. The fuel infrastructure in Newfoundland will enable application of these technologies. • The availability of alternative fuels in Newfoundland is a significant issue. There is no widespread infrastructure for fuels other than gasoline. In the case of natural gas, there is both the cost of getting supply to the province, and the cost of distribution infrastructure. • Cross-island public transportation is rather limited and privatized. It is a secondary consideration at this point, although an important one.

5. CONCLUDING NOTE

At the end of each consultation meeting, participants were asked to complete an evaluation form. The forms submitted indicated a high degree of satisfaction with the sessions. Participants particularly appreciated the opportunity to interact with members of the Table, and to exchange views among groups with differing interests. Overall, the consultations can be considered successful, attracting a wide range of input from a diverse group of stakeholders.

The consultation team believes that a number of factors contributed to this success, including:

- Careful preparation for the sessions
- Availability of substantive documents as a point of departure for the discussion, providing analysis and explicit measures
- Flexibility in agenda and approach (to account for group size, knowledge, linguistic and cultural differences).

The input received focussed on topics of direct relevance to the Table. Some Table members noted that many comments addressed desired outcomes rather than measures to achieve the outcomes, and that some increased emphasis on the measures *per se* would have been valuable.

Participants offered a number of general suggestions for consideration in any future consultations:

- Participants were generally very positive concerning the structure and management of the meetings. They appreciated the tight time keeping that kept the sessions on schedule. Some participants suggested adjustments to the agenda to better address the needs of sessions with larger numbers of participants and presentations.
- Some concern was expressed concerning the dominant role played in some breakout groups by stakeholders with specific interests.
- Participants also suggested that additional stakeholder representation was required in some areas, including shippers, the road-building industry, and the suppliers and users of recreational equipment (for the off road sector).
- Participants from the NWT expressed disappointment a consultation could not be held in the North.

As a group, the stakeholders are engaged in the process, and most wish to continue to be informed and/or involved. A number of participants suggested that specific mechanisms be defined for stakeholder input to the continuing refinement of options. It is clear that the consultations to date have provided a very sound basis for such continuing involvement.